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[Introductory, p. i]

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[Introductory, P. ii]

AN AGRICULTURAL GEOGRAPHY OF THE RECÔNCAVO OF BAHIA

000

A Dissertation
Presented to
the Faculty of the Graduate School
University of Minnesota

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by
Edward Cooper Haskins
June 1956

[Title Page]

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121 The field work on the agricultural systems of the Recôncavo, which formed the basis of the present study, was inspired by the interest and enthusiasm of the late Professor Leo Waibel. The development of the study owes much to the guidance and criticism of
128 Professor John R. Borchert (of the Department of Geography, University of Minnesota) and Professor John C. Weaver (formerly of the Department of Geography, University of Minnesota). The various drafts of the study were read, in whole or in part, by Professor J. O. M. Broek and Dr. Robert Eidt (University of Minnesota), both of whom made many valuable suggestions for the improvement of organization and content. Dr. Erich Bordne and Professor Stephen Jones (of Yale University), generously read and criticised parts of the manuscript. Professor Herold Wiens (Yale University) also advised the author on several occasions.

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May, 1956

Edward C. Haskins

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CHAPTER I

INTRODUCTION

B 433 For four centuries the agricultural development of Brazil has been
241 characterized by a series of speculative phases, each focused on a single
BB product, each centered upon a single region of Brazil. The first com-
249 mercial product was sugar, the first region was the Recôncavo of Bahia.
175 The agricultural society founded on the shore of the Baía de Todos os
Santos in the mid-sixteenth century has persisted with an almost unbroken
BB continuity for over four hundred years. It is with the geography of this
121 agricultural society that the present study is concerned.

B After sugar had ceased to bring a quick profit, the Brazilian
BB center of effort shifted to other areas where economies of cotton, oranges,
433 rice, cacao, and many lesser products opened the land and drew the am-
bitious and the desperate from the older settlements. Intermeshed with
these phases of agricultural development were booms in the exploitative
industries--in the mining of gold and diamonds and in the gathering of
rubber. So characteristic have been these speculative convulsions,
each followed by a shift to a new region, that they might almost seem
to be the whole of Brazilian history and Brazilian reality--the nation
might have been practicing a system of shifting cultivation on an
immense scale with not only fields but whole regions abandoned as the
yield declined. Yet this is not the case, for in each of these regions
BB men remain and crops persist. The Recôncavo, long past its triumph,
178 249 has a present day population of one million people, many of whom are
161 still cultivating the original speculative crop, sugar cane. The
B BB 241 178 Recôncavo is not unique in this respect, for coastal Pernambuco, eastern

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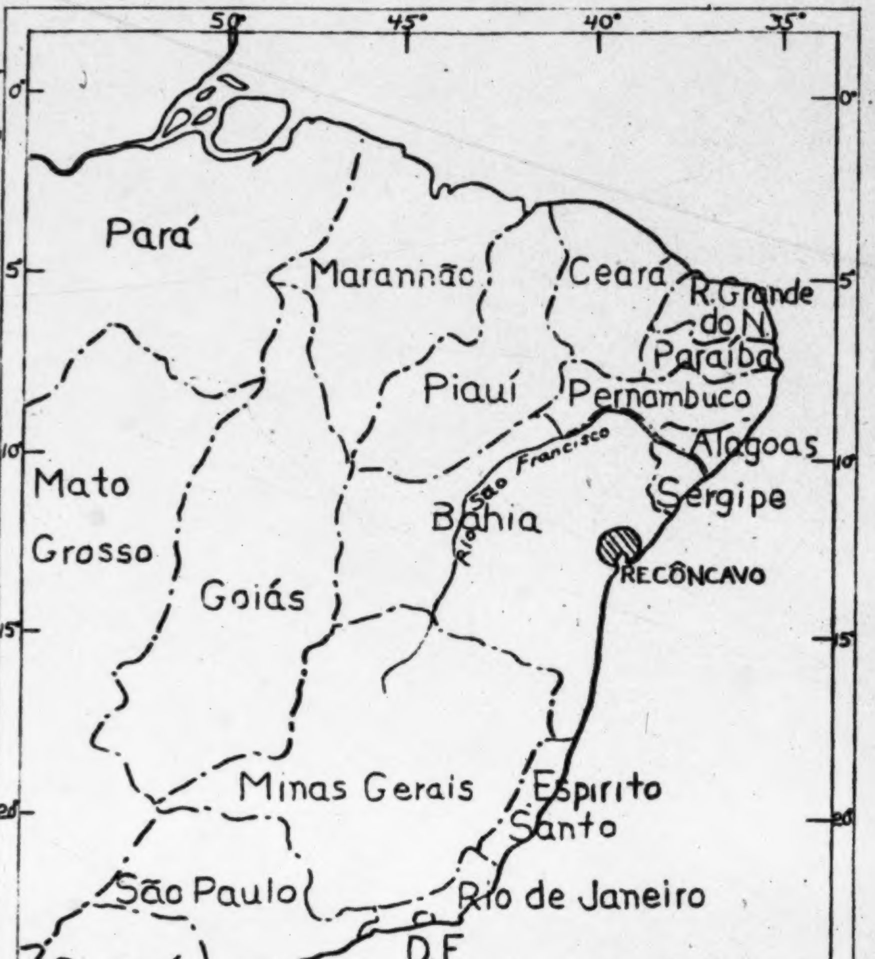
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Piauí
Pernambuco
Alagoas
Sergipe
Mato Grosso
Bahia
Rio São Francisco
RECÔNCAVO
Goiás
Minas Gerais
Espirito Santo
São Paulo
Rio de Janeiro
D.F
Paraná
300 KM.

RECÔNCAVO OF BAHIA

Location Map

MAP 1

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Rio de Janeiro, the Paraíba Valley, and the older coffee areas of eastern São Paulo still contain enduring settlements and cultivated fields. If the speculative development of the nation continues, more and more of the Brazilian landscape will be occupied by these "passive" regions. Such areas have considerable significance as individual sections of Brazilian land and society, and they also provide an opportunity to examine some of the stable and traditional institutions which are concealed in the frenzy of the agricultural booms. It is reasonable to suppose that in these regions the hard core of Brazilian agricultural life is preserved. Here are maintained the values and systems which will not be surrendered.

B
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As a consequence of the localization of the speculative developments, most of the settlements of Brazil are demographically detached and culturally and economically distinctive regions. Frequently these regions compose the effectively settled cores of individual states. Usually they have a single pre-eminent city in which are centralized not only political and social activities but also the organization of commercial agriculture--capital, marketing, processing, and foreign trade. Such central cities include São Paulo, Curitiba (in Paraná), Recife (in Pernambuco), and Salvador (in Bahia). Such is the regional
B
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diversity that one may wonder if it is possible to speak of a Brazilian national culture or of a characteristic Brazilian agricultural pattern. Yet, "throughout Brazil, the people share in one basic culture pattern . . . The different regions present specialized versions of the national culture," the anthropologists have decided.[1] The existence of common agricultural patterns is implicit in the generalizations made about "Brazilian agriculture" by the agricultural specialists, geographers, sociologists, and economists.

B 241 114 The pattern of national agricultural characteristics is given explicit form by Spiegel in The Brazilian Economy.[2] He speaks of the exploitive character of the land rotation system, the dominance of the latifundio system of land holding, of private, corporate, and absentee ownership with extensive tenancy. Rents are relatively high, the status of agricultural labor low. Technology is backward, and the system of marketing is speculative. Most of these same characterizations appear in the appraisal of Brazilian agricultural development which Preston James has made in Economic Growth: Brazil, India, Japan.[3]

B 121 Brazil is a huge country, like India almost a sub-continent. The investigation of its agricultural economy on an intensive scale and in all its aspects is an overwhelming task. For the individual investigator working alone and with a limited time, it seems impossible. One approach is to study the economy in one of its variant regional expressions, a method which seems particularly appropriate on account of the pronounced regionalization of Brazilian agriculture. In particular, the investigation of a "passive" region in which the underlying national patterns are present in a relatively intensified and permanent form should give insight into the basal characteristics of Brazilian agricultural life. Such a region is the Recôncavo of Bahia.

BB 249 175 178 The special place of the Recôncavo in Brazilian agriculture is the result of two historical factors: (1) Many of the agricultural institutions and attributes which evolved in the Recôncavo and in the other sugar cane economies during the colonial period have spread to the rest of the nation, partly through migration and partly through cultural diffusion. BB 249 178 The characteristic figure of the sugar cane economy was the fazendéiro (the planter). "With the change in the structure of the fazenda [plantation] the fazendeiro was regenerated in a series of new types," Normano has said, and points to the fazendéiro background

249 178 of the Paulista,[4] the aggressive business man and agricultural capitalist of São Paulo state. (2) The departure of the more adventurous elements from the sugar economy and the transference of the center of economic development from the Recôncavo have allowed the region to maintain its traditional practices and values and to preserve the colonial background of Brazilian agriculture. Although no single area can typify the entire constellation of the Brazilian agricultural regions, the Recôncavo does seem to epitomize the characteristics which underlie their diversity. It is in a sense a microcosm in which many of the agricultural problems which beset Brazil are isolated in their acute phases.

241 171 The Recôncavo does not, of course, reflect every aspect of agricultural life which may be found in Brazil. Not all the various crops are cultivated in the Recôncavo, although most of the important Brazilian crops are grown to some extent. There is no mixed agriculture such as is found in Rio Grande do Sul, nor are there vast pastoral enterprises like those of Mato Grosso or the remote Northeastern interior. There are few peasant proprietors such as are found in São Paulo. Its pattern of regional organization is not a duplicate of that of any other Brazilian region. In all, however, most of the characteristics of Brazilian agriculture and especially the systems of cultivation and the pattern of agricultural institutions are present
241 121 in the Recôncavo microcosm. This region has several special advantages as the subject of a regional investigation of agricultural phenomena. It is small enough so that it can be studied thoroughly and in a limited period of time. It is large enough to have a diverse internal organization and conflicts of interest which can be analyzed. It is relatively detached so that the gross regional pattern is undisturbed by overlapping and is easy to observe.

[131] [101] Regional Terminology. The term "o recôncavo" can be applied to any crescentic littoral. In Brazil, however, "the Recôncavo" is almost universally understood to refer to a semicircle of land bordering the Baía de Todos os Santos in the state of Bahia. It is no more necessary to ask which Recôncavo in Brazil than to ask which South in the United States.

The Recôncavo has a less consistently defined content and boundary than the United States South. The extent of the area intended is individually determined in both common and scholarly usage--usually the limit of the region is implied rather than delineated. In traditional usage the Recôncavo generally is equated with the sugar cane area, but at least as often the area designated includes all the relatively densely settled and intensively utilized zone around the Baía de Todos os Santos.

121 131 In delimiting the Recôncavo as a preliminary to field and statistical investigation it seemed desirable to enclose all areas which may customarily be included in the region. In addition, since the Recôncavo is conceived here primarily as an agricultural region, it seemed most consistent to include all other contiguous areas of equivalent agricultural utilization. Thus a search was made for a criterion for a tentative boundary which would circumscribe: (1) the traditional Recôncavo areas; and (2) the contiguous areas of equal agricultural intensity; and which in addition would (3) define the limit on a consistent statistical basis. These three requirements would be met with a boundary determined by the per cent of the land in agricultural use--a criterion which would summarize the intensity of land-use for [127] cultivation, fallow, and pasture. Appropriate data were available from the 1940 census. By inspection it was determined that twenty per cent [311] of the total area in agricultural use was the value of an isopleth which would enclose the traditional and equivalent areas and would

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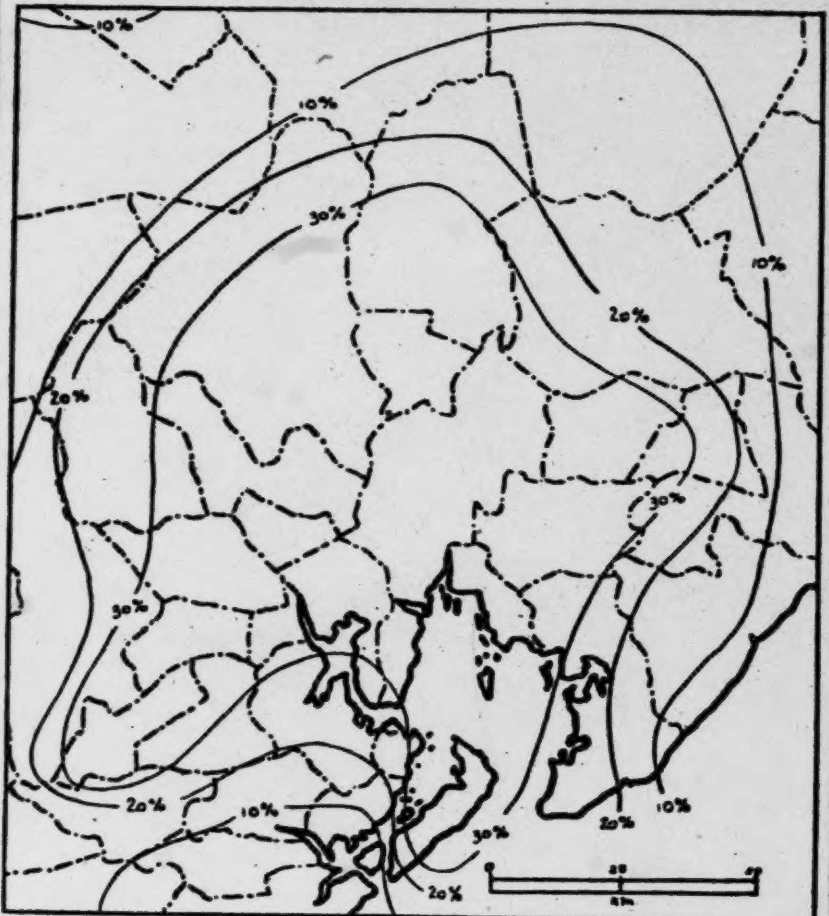
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RECÔNCAVO OF BAHIA

Per cent of the Total Area in Agricultural Use—1940

Source of data: Recenseamento Gerál do Brasil: 1940. Censos Econômicos, Bahia. Vol. II.

MAP 2

12 separate them from the manifestly non-Recôncavo areas of the surrounding 131 [311] zone. This limit of twenty per cent of the total area in agricultural land use corresponded rather closely to the outer boundary of a compact group of twenty-one municípios, and as a tentative regional concept, these twenty-one municípios were considered to be the Recôncavo.[5] The area of the region thus defined is 4,827 square miles (12,500 square kilometers), about equal to the size of the state of Connecticut.

121 241 Purpose and Procedure. The primary purpose of the research upon which this monograph has been based was to analyze, from a geographical point of view, the structure and the functional organization of agriculture within the Recôncavo. It is not within the present scope to make a detailed comparison of the agricultural patterns of the Recôncavo with those of the rest of the nation. However, because of the general unity of the Brazilian agricultural system and the special relationship between the Recôncavo and the origins of the system, a study of the agriculture of the Recôncavo microcosm is a study of many of the basal aspects of Brazilian agriculture.

241 127 Very little literature is presently available on the agricultural patterns of the Recôncavo. Certain general characteristics of the agriculture of the region may be deduced from the brief interpretations of maps of the 1948 production of sugar cane, tobacco, and manioc in the state of Bahia published by the Conselho Nacional de Geografía.[6] Indirect information may be gleaned from the general economic and agricultural histories of Brazil and from the sociological studies of the Brazilian northeast.[7] But comprehensive analysis based upon field or statistical study of the geographical patterns of agriculture of either the state of Bahia or of its nuclear region, the Recôncavo, are lacking.

12 The research upon which this monograph was based was undertaken along two lines: statistical estimation and field investigation. The publication in 1950 of the 1940 agricultural census,[8] and crop,[9] and livestock[10] data for 1948 provided a body of statistical information for the minor civil divisions (municípios) of the Brazilian states. The assembly and tentative plotting of data from the above sources was the preliminary phase of the study. The variable quality and limited scope of the data made necessary an extensive field inquiry to validate and to extend the statistical analysis. The field investigation was divided into two sections: (1) general appraisal; and (2) intensive study of the two dominant agricultural sub-regions. In the general appraisal an effort was made to observe as many of the agricultural centers of the Recôncavo as the time available allowed. During the intensive [114] study the investigator lived in the two sub-regions in an attempt to observe and understand the covert as well as the overt agricultural phenomena of the community and the functional organization of the local economy.

128 The opening chapters of the study (Chapters II through IV) deal with the physical background, historical evolution, and social and demographic characteristics of the agricultural society of the Recôncavo. There follows an analysis of the distribution of the individual crops and of the total cultivated area (Chapter V) and a discussion of the combinations and functional associations of crops and the characteristic systems of cultivation (Chapter VI). The place of livestock in the pattern of crop cultivation is appraised in Chapter VII, and the distribution of various types of agricultural properties are discussed in Chapter VIII. The succeeding chapters deal with the value of agricultural products (Chapter IX) and with the marketing, transportation, and

128 processing of these products (Chapter X). The conclusion (Chapter XI) summarizes the agricultural geography of the Recôncavo and discusses the problems of agricultural development in the region.

000Footnotes - Chapter I

[1] See section by Charles Wagley in Ralph Linton (ed.), Most of The World (New York: Columbia University Press, 1949), p. 226.

[2] Henry William Spiegel, The Brazilian Economy (Philadelphia: The Blakiston Company, 1949), pp. 157-168.

[3] See section by Preston E. James in Simon Kuznets, Wilbert E. Moore, and Joseph J. Spengler (eds.), Economic Growth: Brazil, India, Japan (Durham, N. C.: Duke University Press, 1955), pp. 78-102.

[4] J. F. Normano, Brazil. A Study of Economic Types (Chapel Hill: The University of North Carolina Press, 1935), p. 75.

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[5] The município is the approximate Brazilian equivalent of the county in the United States. The município has two elements: (1) the sede (seat) which is the administrative center and is called a cidade regardless of its size; and (2) the rest of the município, which in the Recôncavo is almost invariably rural. The município usually is subdivided into distritos (districts), each with a seat which, regardless of size, is called a villa. Neither the cidade nor the villa is a corporate entity separate from the município or district; i.e., there is no urban organization per se. In the Recôncavo the cidades are either small cities, towns, or villages, while the villas are villages or hamlets. There is a tremendous range in the area of the various municípios, which may be extremely large where settlement is scattered and small where settlement is dense. In the Recôncavo the largest município has just over 2,000 sq. km., and the smallest has just over 100 sq. km. The município is the primary statistical unit used in this research, although district data have been used on the few occasions where they were available. For a list of the 21 municípios included in the Recôncavo as defined here, see Appendix A.

[6] Ruth Matos Almeida Simões, "Comentário do Mapa da Produção de Cana de Açúcar no Estado da Bahia," Boletim Geográfico, Vol. XI, No. 113 (March-April, 1953), pp. 171-173. Ariadne Soares Souto Mayor, "Comentário do Mapa da Produção de Fumo na Bahia," Boletim Geográfico, Vol. XI, No. 112 (January-February, 1953), pp. 87-90. Ruth Matos Almeida Simões, "Comentário do Mapa da Produção de Mandioca no Estado da Bahia," Boletim Geográfico, Vol. XI, No. 112 (January-February, 1953), pp. 84-86.

[7] Such as: Gilberto Freyre, Nordeste (Rio de Janeiro: José Olympio Livraria Editora, 1937), 267 pp. Luis Amaral, Historia Geral da Agricultura Brasileira (São Paulo: Companhia Editora Nacional, 1939-40), 3 Vols. Charles Wagley (ed.), Race and Class in Rural Brazil (Paris: United Nations Educational, Scientific and Cultural Organization, 1952), 160 pp.

[8] Instituto Brasileiro de Geografia e Estatística, Recenseamento Geral do Brasil: 1940. Censos Econômicos, Regional Series, Part XII-Bahia, Vol. II (Rio de Janeiro: Serviço Grafico do Instituto Brasileiro de Geografia e Estatística, 1950).

[9] Ministério da Agricultura, Serviço de Estatística da Produção, Produção Agrícola: 1948 (Rio de Janeiro: Serviço Gráfico do Instituto Brasileiro de Geografia e Estatística, 1950).

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[10] Ministério da Agricultura, Serviço de Estatística da Produção, "População Pecuária, em 31/12/1948," (section of unpublished mimeographed manuscript).

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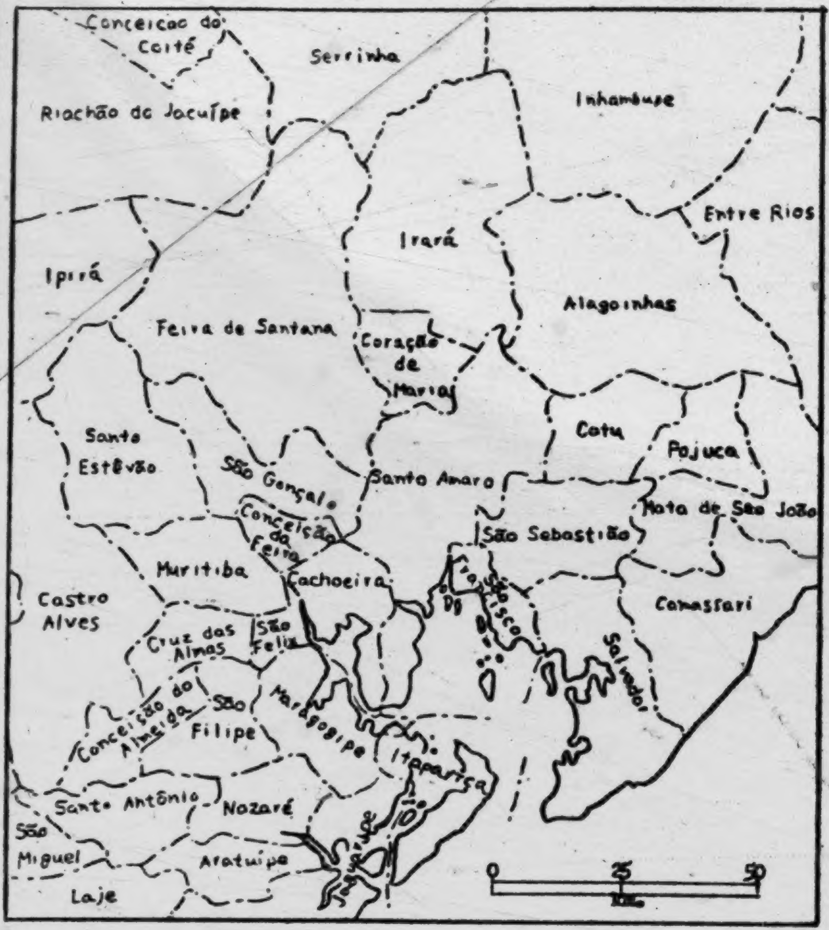
Conceicao do Coité
Serrinha
Riachão do Jacuípe
Inhambupe
Entre Rios
Irará
Ipirá
Alagoinhas
Feira de Santana
Coração de Maria
Cotu
Pojuca
Santo Estêvão
São Gonçalo
Santo Amaro
Mata de São João
Conceição da Feira
São Sebastião
Muritiba
Cachoeira
Castro Alves
Camassari
Cruz das Almas
São Felix
Dq
Francisco
Salvador
Conceição do Almeida
São Filipe
Maragogipe
Itaparica
Santo Antônio
Nazaré
São Miguel
Aratuípe
Laje
Jaguaripe
0
25
50
Km.

RECÔNCAVO OF BAHIA

Município Boundaries—1948

Source: Conselho Nacional de Geografia, "Cartograma da Divisão Administrativa do Estado da Bahia."

MAP 3

CHAPTER II

PHYSICAL SETTING

121 13 Introduction. The analysis of the physical setting of the Recôncavo which follows is intended primarily as a background for the interpretation of agricultural phenomena. As such, it is particularly concerned with those physical elements--flat and rough lands, productive and unproductive soils, humid and dry climates, and exploitable wild vegetation--which bear directly upon crop cultivation and animal industry. The statistical and map information and the literature on these physical elements are very limited. The general procedure used in developing this analysis was to formulate inferences based upon these limited sources and then to confirm or modify the inferences by field observation.

13 The narrow coastal plain and tabular uplands, the humid and sub-humid climates, the soils, and the forest and scrub forest vegetation typical of the northeast of Brazil are also characteristic of the Recôncavo. However, the presence of a rift occupied by the Baía de Todos os Santos and by a compact lowland pocket has given these characteristic features a distinctive geographical pattern in the Recôncavo.

Transition is a basic feature of the physical setting in which the economic and social institutions of the northeast of Brazil have been developed. Throughout the Northeast there are profound environmental differences between the coast and the interior. Even in as restricted an area as the Recôncavo, the rapid transition from the humid coastal lowland to the drier interior upland is a significant element in the regional complex.

133 Landforms. Flat surfaces are a characteristic feature of the landscape of the Recôncavo. Where these flat surfaces are low and undivided, they form the plains of the coast and the central Recôncavo. Where they are higher and separated by valleys into relatively extensive tabular segments, they form the uplands of the north and west of the region. Where the flat surfaces are dissected into numerous small tabular or rounded segments, they form the belt of intermediate hills. The slopes separating the hills and the uplands have different forms. Some tabular surfaces are separated by steep and rugged slopes, occasionally leading to flat valley floors. In other cases rounded slopes are common. The accompanying map of east-central Bahia delineates four zones in each of which a distinctive association of these various forms is characteristic.[1]

The Tabular Uplands. The Tabular Uplands have a landscape of considerable simplicity. They have been formed upon a surface of relatively flat-lying sedimentary rock, generally Tertiary sandstone, although sometimes Cretaceous shale has been exposed in the valleys.[2] The surface has been subdivided by stream erosion into tabular segments called taboleiros. Many of these taboleiros are very extensive: one continuous taboleiro on the northern border of the Recôncavo covers a large part of northern Irará, southern Inhambupe, and eastern Serrinha. They are essentially plain surfaces with a local relief on the order of ten meters or less. At the edges these tablelands break away sharply into very rough zones, often of badland topography. The larger valleys are cut one hundred meters or so below the upland surface. Minor valleys are generally narrow, but the major streams have cut laterally so that they have produced relatively flat-bottomed valleys up to two [134] or three kilometers wide. The taboleiro surface is commonly mantled

[TEXT CONTINUED ON PAGE 18]

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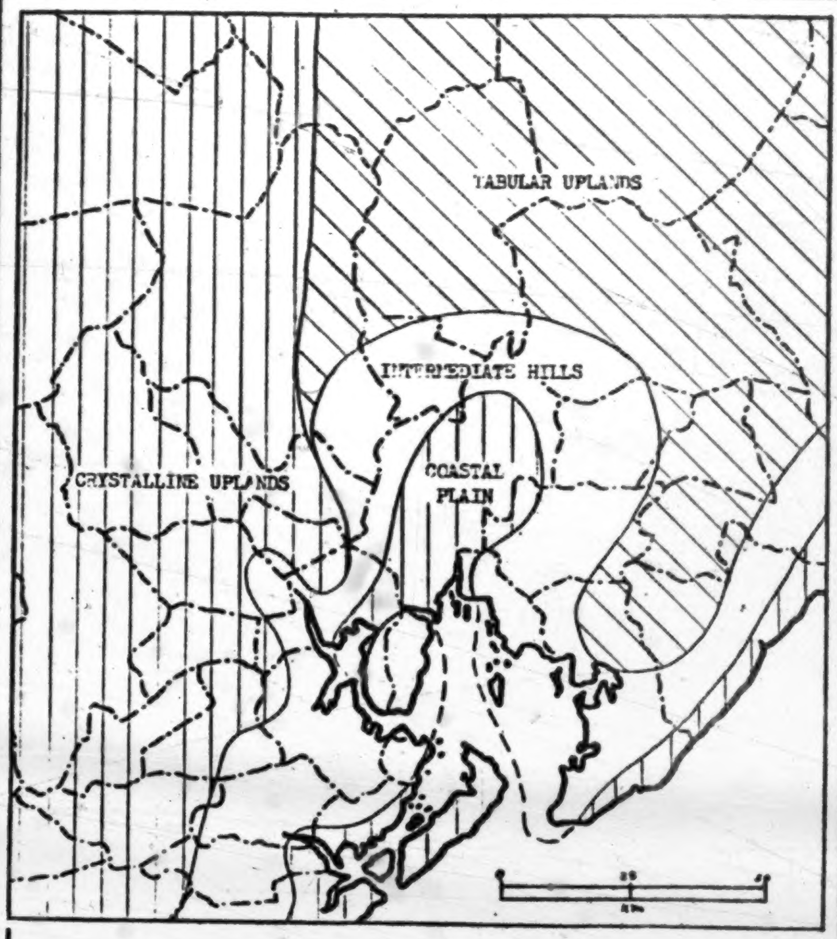
TABULAR UPLANDS
INTERMEDIATE HILLS
COASTAL PLAIN
CRYSTALLINE UPLANDS
0

RECÔNCAVO OF BAHIA

Landform Regions

MAP 4

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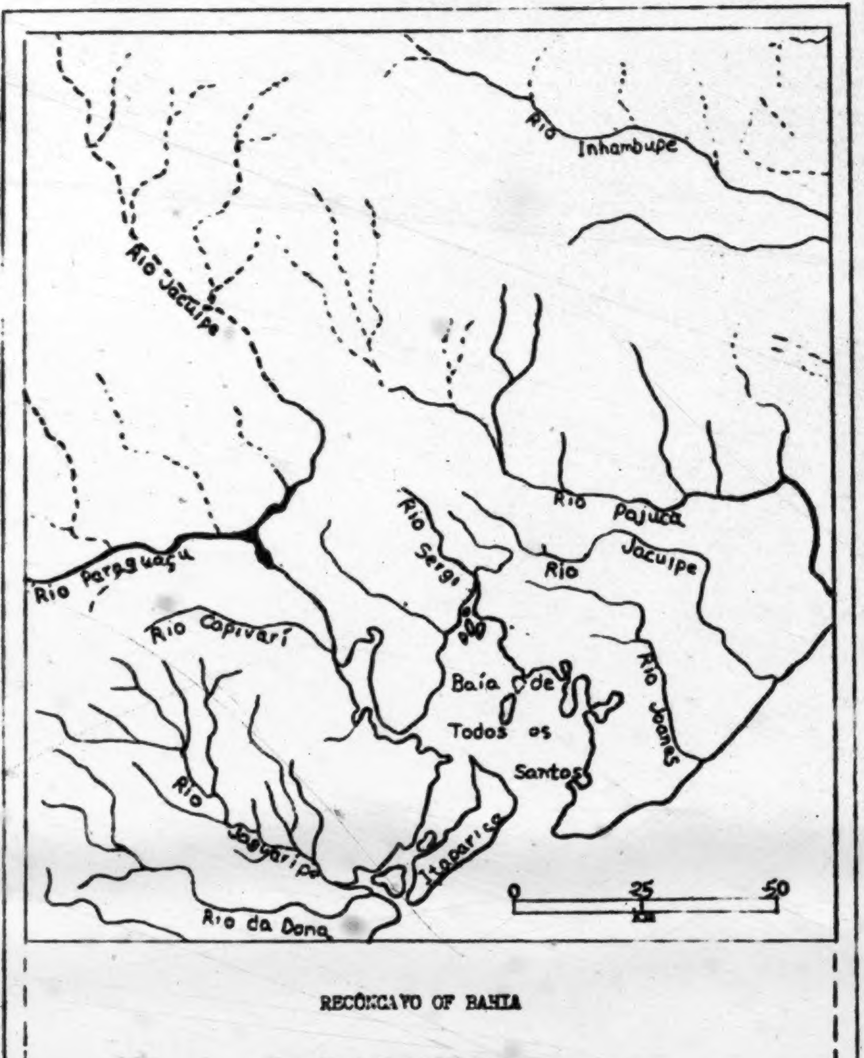
Rio Inhambupe
Rio Jacuipe
Rio Pojuca
Rio Jacuipe
Rio Sergi
Rio Paraguaçu
Rio Capivarí
Baía de Todos os Santos
Rio Joanes
Rio Jaguaripe
Itaparica
Rio da Dona
0
25
50
Km

RECÔNCAVO OF BAHIA

Important Physical Features

MAP 5

133 in a layer of porous sand, and surface drainage is not well developed. 134 The valley floors are often choked with loose sand brought down from the upland, which is re-sorted and shifted by the rising streams in the wet season.

133 The southern part of the Tabular Upland zone, which borders the Recôncavo, is drained by two major river systems which flow directly eastward to the open ocean. The Rio Inhambupe rises in the midst of the vast taboleiros of Serrinha, Inhambupe, and Irará and skirts the northern boundary of the Recôncavo. The southern edge of the Tabular Upland zone, lying within the Recôncavo, is drained by tributaries of the Rio Pojuca, which flow southward to join the main stream in its eastward course to the ocean.

The Crystalline Uplands. Tabular surfaces of a different order are characteristic of the crystalline zone which stretches from the western margin of the Bay westward to the Chapada Diamantina. These surfaces have been formed upon a relatively flat platform of crystalline rock--the so-called crystalline peneplain of Eastern and Northeastern Brazil. In this part of Bahia, however, the rock surface usually is buried deeply under a layer of residual mantle and appears only on valley walls and bottoms. The mantle has been dissected into tabular segments which are generally smaller than those of the Tabular Uplands. The valley formation is more distinctive: after an abrupt break the slopes form a continuous curve so that the valley bottoms are relatively more narrow and are gently sloping. Rising above the general upland level are occasional monadnocks with rounded, often rocky, surfaces.

So similar are the upper surfaces of the crystalline zone to those of the Tabular Uplands that the individual surfaces occasionally

133 [134] are called taboleiros. This similarity is enhanced by the occasional appearance of sandy surface materials. However, the taboleiros of the Tabular Uplands are generally extensive; the individual uplands of the crystalline zone are generally of limited area. Valleys are an exceptional and areally limited part of the Tabular Uplands; in the crystalline, the valleys occupy a very significant part of the land, although collectively the area in tabular surfaces exceeds that in valleys.

The upland surfaces of the crystalline, like the Tabular Uplands, lack surface drainage. Where the upland surface is extensive, shallow circular depressions are often encountered. Some of these form large, shallow lakes or swamps overlying impervious clay layers. Equally characteristic is a small circular depression, ten to fifty meters in diameter, with a pit in the center through which water drains into the porous subsoil.[3] Neither of these depression forms was observed outside the crystalline zone.

Swamps and ponds are also found in the valley bottoms. Very often a resistant section of bedrock forms a constriction in the valley walls, and when this constriction becomes choked, streams are partially dammed. The streams themselves almost invariably originate in springs at the bottom of steeply sloping valley walls. A very characteristic site for these springs is in the very regular ampitheater-like bowls at the valley heads.

Almost all of the Crystalline Uplands of the Recôncavo are drained by a single river system—the Paraguaçu. The main stream and its major tributaries rise in the Chapada Diamantina and the Serra da Sincora far to the west in central Bahia. By the time it has reached the Recôncavo, the Paraguaçu is deeply entrenched in the upland. It drains only a narrow belt along each side by means of short, precipitous, and intermittent streams. Its main northern tributary, the Rio Jacuípe,[4] which is less deeply entrenched, drains the northern half of the Crystalline Uplands within the Recôncavo. The Rio Capivarí, which joins the estuary of the Paraguaçu, drains part of the southern half. The extreme southern part is drained by south-flowing tributaries of the Rio Jaguaripe, which reaches the ocean at the southernmost extreme of the Bay.

The Intermediate Hills. The coastal margins of both the Tabular and the Crystalline Uplands have general elevations of about 150 meters. The drop from this elevation to the coastal plain takes the form of a rough and deeply-dissected hill land, here called the Intermediate Hills. Tabular forms are still important in this area, especially along the interior boundary. However, these hills are differentiated from the uplands because of the relatively large amount of the total area which is in slope.

In those areas where the hills are cut in crystalline rock--along the edge of the Crystalline Uplands and along the coast north of Salvador--rounded, narrow-valley profiles are common. In the part of the hill land south of the Paraguaçu the transition from upland to seashore is very rapid, and the hills are particularly rough. North of the Paraguaçu and along the north coast the hills are less rugged.

In the northern Recôncavo, where the hills are cut in sedimentary material, the slopes are straight and steep, the valleys extremely narrow, and the whole complex minutely dissected. The sequence of hill forms from the uplands to the plains have the following characteristic stages: (1) in the upland the valleys cut deeper and the flat surfaces become smaller and smaller; (2) the valleys become very deep

133 (100 meters), and all flat upper surfaces disappear; (3) the height and circumference of the hills decrease and the valley floors widen; and finally (4) the plains dominate the surface.

The Intermediate Hills continue both north and south of the Recôncavo. In the south they become progressively rougher as they approach the low serras which here lie near to the coast. To the north, beyond the Recôncavo, the hills have relatively gentle slopes.

The Coastal Plain. Along the ocean both north and south of the Recôncavo the Coastal Plain is narrow. This plain enters the Recôncavo through the Bay (Baía de Todos os Santos) and forms a pocket of low-lying, relatively flat land which is the heart, geographically and historically, of the region. Most of surface of this zone is an undulant plain with an almost complete lack of steep slopes, but there are exceptions. In terms of the amount of land in steep slope and of elevation, the plain falls naturally into two sections. The part of the Coastal Plain which directly borders the ocean, including the islands of the Bay, lies very close to sea level. In the interior of the island of Itaparica and the smaller islands there are occasional steep slopes, but these are formed either on small hills or low sea cliffs.

The section of the Coastal Plain north of the Bay lies at an elevation of from 75 to 125 meters. Its surface is very gently undulating, and there are no steep slopes except for scattered and isolated hills near the interior margins and for the rough zone separating the slightly elevated plain from the Bay. Only around the cidade of Santo Amaro is there an appreciable plains area at near sea level. Much the same alignment of landforms is found in the smaller compartment of the Coastal Plain at the head of the Bacia do Iguape in the município of Cachoeira.

133 The parts of the Coastal Plain along the ocean and above the Bacia do Iguape are drained by local streams. In the more extensive plain north of the Bay there are a number of larger and more significant rivers and streams. The northern part of the latter area is drained by the Rio Pojuca, the middle part by the Rios Jacuípe and Joanes, and the southern part by the Rios Traripe and Sergi. The Traripe and Sergi enter the Bay, but the other, larger streams drain eastward to the ocean. Except where the Traripe and the Sergi cross the rough edge of the plain, all the stream valleys are relatively shallow.

The Bay. There remains a last section to deal with—a very significant part of the Recôncavo, but not properly a "landform" area. This is the Baía de Todos os Santos. The Bay may be viewed as a central parallelogram which contains within it the deep water and which has a number of shallow, jointed channels extended from the corners. Beyond these channels, estuaries extend the Bay inland in three directions. Structurally the Bay is a part of the rift valley, but its present outline corresponds to the major fault scarp in only one place--in Salvador. Here the scarp separates the upper and lower sections of the city. [134] Elsewhere the form of the Bay is determined by erosion of, and to a lesser extent, deposition upon the folded and faulted sedimentary deposits accumulated within the rift. These processes have produced a northern coast of bluff-enclosed bays and steep-sided archipelagoes, a western coast which is relatively straight and which rises to a higher elevation above the Baía de Todos os Santos, and on the south, the island of Itaparica, which stands like a door half-closed across the entrance to the Bay.

133 487 The three most significant channels enter the western Bay from north, west, and south. Of these the Rio Sergi, on the north, is navigable for the shortest distance--this estuary is navigable by river launch only to Conde, which is the approximate limit of salt water, but sailing boats penetrate to the cidade of Santo Amaro.

The lower Paraguaçu provides entrance westward deep into the Intermediate Hills and to the edge of the Crystalline Uplands and opens a route to a smaller bay--the Bacia do Iguape. Motor vessels can reach São Roque, Maragogipe, and Cachoeira-São Félix through this deeply incised channel.

The southern channel, broader but more shallow, passes between the island of Itaparica and the mainland and entering the estuary of the Jaguaripe extends as far as Nazaré, which is the head of navigation of the southern area peripheral to the Recôncavo.

The Bay is the central area of the southern Recôncavo. Two of the channels, the Paraguaçu and the Sergi, link parts of the Recôncavo with the Bay. The third, which leads to Nazaré, primarily connects the Bay with an area outside the Recôncavo.

133 Land - Summary. In the Recôncavo there is much flat land in the uplands, but the area in plains is relatively limited. In the uplands, and to a lesser extent in the hills and along the margins of the plains, the flat surface is subdivided into individual segments.

The largest single segment of relatively flat land in the Recôncavo is the coastal plains area north of the Bay. The other plains areas--the island of Itaparica and the small compartment north of the Bacia do Iguape--are smaller flat-surfaced segments. After these, the largest continuous flat surfaces are the extensive taboleiros of the Tabular Uplands. Smaller tabular surfaces are

133 characteristic of the Crystalline Uplands; while in the hill zone the individual flat surfaces are very small.

Local relief is usually greatest in the uplands, near the major rivers, such as the Paraguaçu, Jacuípe, and the Inhambupe, and where these rivers cross the hill belts. On the plains the local relief is usually about fifty meters, but north of the Bay about twenty-five meters.

Soils

134 Introduction. Fertile soils are not extensive in the northeast of Brazil. In this respect it is typical of the tropics, where only singularly propitious base materials or exceptional genetic processes have succeeded in producing soils of high natural fertility. As a result of the prevailing infertility, the limited fertile areas have an extraordinary importance.

Bondar testifies to the general infertility of the soils of Bahia and thus indirectly to the significance of the areas of good soil:

> The modest percentage of the soil which is cultivated, in relation to the expanse of territory, does not allow us to conclude that it is still too early to worry ourselves with the conservation of agricultural soils. Arable land is scarce in Bahia. There are great expanses of territory which are not suitable for the cultivation of annuals.[5]

Perhaps the lack of interest in soil conservation in the Recôncavo is a result of the almost mystical faith in the unending richness of the massapê--the Cretaceous soils of the sugar cane zone.

The Rêconcavo as a whole is an area of only moderately fertile soil. There are many zones of extreme infertility. The soils of the Recôncavo generally have been divided into three general types, and as will be seen, tend to have a distinctive pattern of land use.

Soil mapping and analysis are still in a preliminary stage in Bahia. The most comprehensive source, the work of Bondar, includes a soils map of the state on a scale of 1:3,000,000.[6] Although the scale of this map is too small to give precise information for the Recôncavo, his accompanying description is in greater detail. It is based upon geologic zones. The discussion of soils below is based primarily upon the descriptions of Bondar, but the soils regions are derived from a more detailed geologic map.[7] Although the system of classification of Bondar has been retained, his soils descriptions were modified in some details to conform to the field observations of this research.[8]

The System of Classification Based upon Bondar.[9]

1. Clay soils of Cretaceous origin
   a. *massapê* (heavy dark clay)
   b. *salão* (light reddish clay)
   c. *arêia* (sands)
   [d. clay soils of *taboleiros*]

2. Sandy soils of Tertiary *taboleiros*
   a. valley alluvium
   b. *taboleiro* soils
   c. sands of crystalline zone

3. Variable crystalline soils originating on Archeozoic rocks
   a. poor soils from clear, white acid rocks } 1. light upland soils
   b. better soils from neutral pigmented rocks } 2. red and brown clays
   c. good soils from dark basic rocks }
   d. good soils from clear rocks } 3. crystalline *massapê*
      1. granite-calcite }
      2. feldspar-mica-amphibole }

[4. Calcareous soils from Algonkian rocks]

[5. Soils from sandstones of Paleozoic and Algonkian *chapadas*]

[6. Mixed soils of fluvial origin.]

Note: Soils types which are bracketed are part of Bondar's system but do not appear in appreciable areas of the Recôncavo.

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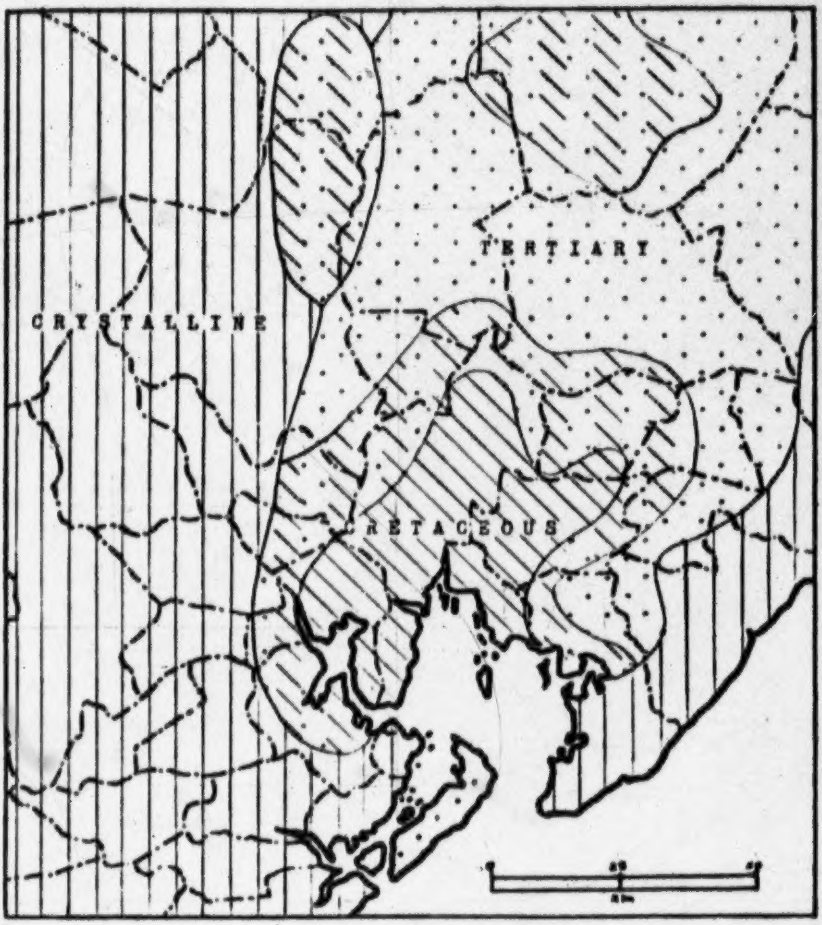
CRYSTALLINE
TERTIARY
CRETACEOUS

RECÔNCAVO OF BAHIA

Soil Types

Modified from maps by Gregorio Bondar, "Solos da Bahia, Sua Conservação e Aproveitamento," and Sylvio Froes Abreu, "O Recôncavo da Bahia e o Petróleo do Lobato."

MAP 6

134 *Clay Soils of Cretaceous Origin.* The Cretaceous soils occupy an extensive zone in the Recôncavo, chiefly on the northern perimeter of the Bay and in the adjacent coastal plain compartment. These soils are predominately colloids of clays derived from calcareous shales and sandstone through the decalcification and mixing of materials. The result of these processes has been an extremely adherent and coherent clay with good water holding capacity, moderate depth, and marked resistance to erosion. In dry seasons it develops deep cracks and is thus, to some extent, self-cultivating. This is a good soil for general agricultural purposes, but in the Recôncavo it is usually used for sugar cane.

The clay soils are by no means uniform, and the cultivators of the area distinguish by local names three types which correspond to different mixtures of sands and clays: *massapê*, *salão*, and *aréia*.

"*Aréia*" means sand, and the soils of this designation are the sandiest of the Cretaceous soils. As the term is commonly used in this area it seems not to refer to the relic deposits of Tertiary sands, *in situ*, but rather to soils derived from the mixing of these Tertiary sands with Cretaceous clays or to soils derived from the sandier Cretaceous materials. Whatever their origin, the *aréia* soils range in composition from sands to sandy loams and in color from grey to dun. [249] From the point of view of yield, the *aréia* soils are considered to be the least valuable by the sugar cane growers of this zone.[10] They are, however, the most easily worked soils of the Cretaceous series, especially when wet, and this is a significant virtue, because these soils are located in a zone of heavy precipitation.

The *massapê* is the soil *par excellence* in the tradition of the Recôncavo. Brazilian soil scientists classify this soil as an *argila* (clay). However, the following citation from an American geologist

134 suggests a better English equivalent:

> North of the Bay of Todos os Santos lies an undulating region some sixty miles long by thirty wide. The soil of this region is a cretaceous marl, exposed by the tertiary overburden having been eroded away. The deposit is of great thickness and may be compared with the black gumbo Belt of Southern Arkansas and Northern Texas.[11]

The fertility of the massapê is established by both chemical analysis[12] and the history of agriculture in the Cretaceous zone. For four centuries these soils have supported a system of intensive sugar cane cultivation, presumably without severe decline in yield. Soil fertilization was practically unknown until the last half-century and is still uncommon.

134 An element in the local mythology of the massapê is that it is
133 completely resistant to erosion; and indeed there seems to be little erosion in most areas of massapê soil. However, the southern edge of the massapê zone, drained by the Rios Traripe and Sergi, is deeply and severely gullied. In the north the downcutting of the Rios Jacuípe and Joanes apparently has been limited by the resistant barrier of crystalline rocks through which the rivers pass in their seaward course.[13] The low gradients of these streams may have restricted stream bed erosion and reduced the erosion of the interfluves.

134 Sandy Soils of the Tertiary Taboleiros. While the Tertiary deposits and the soils derived from them have been removed almost entirely from the mainland areas close to the Bay, they still cover most of the land surface farther north. Most of the Tertiary soils are derived from fine-grained and weakly-cemented sandstones. The sandy soils are variable in depth, but very thick soils are not uncommon. Because of their porosity, these sands are extremely vulnerable to drought. They are easily eroded and especially subject to gullying. Their fertility, especially in situ, usually is very low.

134 The *taboleiro* (upland) soils of this type are in some areas almost sterile, completely unsuited to cultivation. Even the best of [132] the upland Tertiary soils is relatively unproductive. Whether the soils are deep or shallow, the crops grown upon them suffer severely from desiccation during the dry season and during the perennial droughts characteristic of the northeastern interior. The porous [133] character of these sands has restricted the development of surface streams and of erosion in the centers of the *taboleiros*. On the edges the exposed slopes of the *taboleiros* have been gullied deeply.

Two contrasting soil types are found in the valleys. Sands carried from the uplands have mixed with fresh materials and with small quantities of humus and have produced more fertile sandy soils. These alluvial soils are much more intensively used than those of the *taboleiros*, but cultivation is hazardous because of frequent flooding. Where the main streams--such as the Rio Inhambupe--have cut deeply they have exposed the underlying Cretaceous series. In these deeper valleys the soils are very similar to those of the larger Cretaceous zone to the south.

The boundary between the zones of Tertiary and Cretaceous soils is broad and irregular. The surfaces of the interfluves are covered with Tertiary sands; the deeper valleys have Cretaceous clays. The wide boundary zone has never been mapped in any detail; therefore the location of the common border on the map of this study can be drawn only approximately. A few Tertiary sands are found in the crystalline zone to the west--these will be discussed below.

Soils of the Crystalline Zone. The geologic and topographic maps which are available for the Recôncavo are a useful guide to the distribution of soils derived from sedimentary deposits. However, in

134 the crystalline zone, where the intricate alternations of granites, gneisses, and schists have not been mapped, there is no such guide to soil distributions.

Bondar has divided the soils of the crystalline zone into four types, based upon the character of the rock material, but these soil types have not been mapped. The lack of geologic maps limits the utility of his classification in a study of this scale.

Field observations in the course of this research suggest that, at least as far as the Western Recôncavo is concerned, topography is a useful guide to soils on the crystalline rocks. Tabular uplands, slope lands, and valley bottoms each have characteristic soil associations.

The common upland soils are extremely deep--20 to 30 meters is not at all uncommon--and except for a thin surface layer disturbed by cultivation or by roots, they are physically uniform from top to bottom. They are usually brown sandy loams, often with a large percentage of very coarse dark sand and with a complete absence of rock particles of any size except for the last few centimeters in contact with the rock surface. These soils are very porous, generally lacking any sort of surface drainage, and are very flat-lying. The name _taboleiro_ (tableland) is applied to both the surface and the soil of this zone, as well as to the surface and the soil of the Tertiary _taboleiros_ which are so similar. These upland soils apparently are very ancient and heavily leached, thus relatively infertile. In the drier areas they are sometimes saline.

On the relatively steep but usually rounded slopes of the Crystalline Uplands the rocks generally come nearer to the surface. On these slopes the sandy loams are replaced by reddish brown clay-loams and clays, which are usually extremely plastic. Rock fragments are common.[14] Clay-loams and clays are the best general purpose soils of

134 the Crystalline Uplands. Although in slope, these soils stand up remarkably well under abusive cultivation methods. The general distribution of these upland and slope-land soils is related to the pattern of landforms in the Recôncavo. In the Intermediate Hills the red-brown argillaceous soils predominate. In the Crystalline Uplands the arenaceous soils occupy the largest area, but the slope-land clays and clay-loams are also extensive.

On the less well-drained valley floors and in the shallow depressions on the uplands, a soil has developed which locally is called massapê or crystalline massape[15] because of its resemblance to the massapê of the Cretaceous zone. In the depressions a black or grey marl is common. It is very similar, at least in physical character, to the Cretaceous massapê In the valleys the soils are less argillaceous but have a greater humus content. Although heavy and sometimes acid, especially in the depressions, these soils are very useful when drained. However, draining the soil is usually an insuperable problem for the small cultivator. Nevertheless, [241] he finds some use for the soil, for he laboriously transports it to the upland to use as a fertilizer.

Soils derived from non-crystalline rocks are also found in the crystalline zone. In the Western Recôncavo the Tertiary deposits were laid down directly on the crystalline rocks. In some areas there are minor remnants of these rocks. Over more extensive areas, Tertiary-derived soils are the characteristic surface material, locally called aréia branca (white sand). These soils are almost pure sand, very light colored and very porous and infertile. Such soils are frequently encountered south of the Rio Paraguaçu. Similar soils are found along the crystalline-sedimentary boundary north of the river. These may not be residual—it is possible that they were transported westward from the main Tertiary zone by wind or stream action. Though aréia branca is a characteristic feature of much of the Western Recôncavo, this soil is not typical of the area farther west.

134 The soils of the peninsula northeast of the city of Salvador are [245] chiefly crystalline-derived. Near the sea and extending inland five or ten kilometers is a belt of white sand dunes, which are not cultivated but are planted in coconut palms. Bondar reports some fertile diorite-derived soils in the peninsula above Salvador, but does not precisely locate the area.[16] Observations in Salvador and its environs suggest that at least two soils of the Western Recôncavo, the crystalline *massapê* and the slope-land clays and clay-loams, are characteristic also of the peninsular area.

134 133 *Alluvial Soils.* The areas of alluvium in the Recôncavo are so limited that it might almost be said that there are no alluvial soils. There are no conspicuous deltas. Along the margin of the Bay and the estuaries which feed into it there is usually a precipitous decline from the plains or hills to the narrow beach. Narrow lowlands with alluvial soil were observed in three areas: (1) on the west coast of the island of Itaparica and on the mainland opposite; (2) on the north side of the Bay between the Rio Sergi and the island of Madre de Deus;[17] and (3) along the estuary of the Rio Paraguaçu between the *cidade* of Maragogipe and the head of the Bacia do Iguape. These marginal alluvial lowlands cover only a very limited area of the total Recôncavo. Most of the alluvial lands are mangrove swamps or very low-lying semi-swampy [241] plains. No cultivation was observed in any of these alluvial areas.

Most of the valleys of the Recôncavo are so narrow that except in the major valleys of the Tabular Uplands, river bottom alluvium is rare.

Soils - Conclusion. The soils pattern which has been developed above is closely related to the patterns of parent material and topography. These correlations are in part a reflection of strong functional relationships between material, terrain, and soil in the Recôncavo. These

134 133 correlations are in part only apparent: they result from using geologic and topographic categories to map and classify soils.

13 Both climate and vegetation are also important factors in soil formation. Since the Recôncavo is a zone of sharp transitions in climate and vegetation, it is to be expected that these variations would be reflected in the soil pattern. In the Recôncavo, however, patterns of climate and vegetation generally re-enforce the patterns of material and terrain as they affect soils. The Cretaceous coastal lowlands are the most humid part of the Recôncavo. The inland Tabular and Crystalline Uplands, which is to say the Tertiary and crystalline soil zones, are markedly drier, as will be seen below. Thus the boundary between the Cretaceous and non-Cretaceous soils approximates a climatic transition, a transition which is also the forest and scrub-forest boundary.

134 241 The soils of the Recôncavo have been used for agricultural purposes for a long time--for about 400 years in the Cretaceous zone. They have been used with varying intensity: in the Cretaceous zone under an intensive monoculture, in the other soils zones under less intensive systems of field and fallow or as wild pasture. The affects of this prolonged use, with little soil conservation, can be only inferred. In the Cretaceous zone there is much complaint of low sugar cane yields, and a few cultivators are turning to commercial fertiliser. It is not clear whether these complaints and remedies result from a marked deterioration of the soil or from the declining competitive position of the sugar industry of the Recôncavo. In the crystalline zone it seems likely that only in the last few decades has cultivation become sufficiently intensive to cause--through shortening the fallow period--the deterioration of the soils. This affect is now beginning to be noticeable in the relatively intensively cultivated lands near the Rio Paraguaçu.

134 241 The different cultivation practices of the agricultural systems associated with the soils zones seem likely to intensify the present soils pattern. If commercial fertilizer is used on an increasing scale in the Cretaceous zone and if intensification of cultivation continues in the crystalline—as seems possible--the differences between these soils will be accentuated. It is apparent in any case that significant regional differences in soils will be a continuing feature of the Recôncavo for some time to come.[18]

Climate

132 Introduction. The northeast of Brazil is an area of tropical climates, without frost except in a few interior highlands, and without pronounced seasonality of temperature. The margins of the sea are generally humid; the interior is dry. Usually the humid maritime belt is narrow, and the transition to the drier Northeastern interior is very rapid.[19] The profound climatic differences between the coast (the práia or beach) and the interior (the sertão) are reflected in the contrasting economies—coastal cultivation and interior livestock industry—and in the deep social gulf which separates the people of the coast and the interior. "The two Northeasts," Freyre calls these contrasting physical and cultural zones.[20]

Along the central coast of Bahia the transition from humid littoral to dry interior has an irregular character, due to the presence of the Serra do Mar (here called the Serra da Papuã) to the ocean south of the Recôncavo. The mountain-backed southern coast is more humid than the lower northern shore. The coastal humid zone is carried inland around the littoral of the Bay.

The temperature pattern of the Recôncavo is relatively simple.[21] The mean annual temperature at Salvador is 25° C. and at Cruz das Almas (the most interior weather station in the Recôncavo), 24° C. Neither

132 station has an annual range of more than 7° C. The average daily minimum for the brief record of Cruz das Almas is 19° C.—the average maximum, 28° C. The absolute minimum recorded temperature was 13° C, while the absolute maximum was 37° C. These data for Cruz das Almas are probably typical of the interior section of the Recôncavo. More narrow ranges between maximum and minimum temperatures are characteristic of the coast. The mean deviation for the region--since Cruz das Almas is probably representative of the most variable situation--is less than 5° C. From the foregoing it is apparent that winter and summer have little meaning in the Recôncavo in terms of absolute temperatures.

Sensible temperatures are more variable, for they depend upon humidity, sunlight, and winds as well as upon absolute temperature. In the interior, outdoor activity is reduced during the cooler wet season and also during mid-day in the hot dry season. Wind exposure becomes very important, and those locations where the even flow of the trades is uninterrupted are preferred for dwellings, especially in Salvador. On the other hand, humid coastal areas which are cut off from the trades--such as the "lower city" of Salvador—often are very oppressive.

132
133 Annual Precipitation. The uneven seasonal and areal distribution of rainfall in the Recôncavo contrasts with the relatively uniform distribution of temperatures. With insignificant exceptions, any traverse from the coast to the interior passes from a humid to a less humid zone. Thus the outline of the coast, including the indentation of the Bay, is generally reflected in the distribution of precipitation. In addition, the coast north of the Recôncavo is distinctly less humid than the mountain-backed southern coast, and this general transition also is reflected in the rainfall pattern of the Recôncavo, as may be seen on the map of mean annual precipitation.

[TEXT CONTINUED ON PAGE 37]

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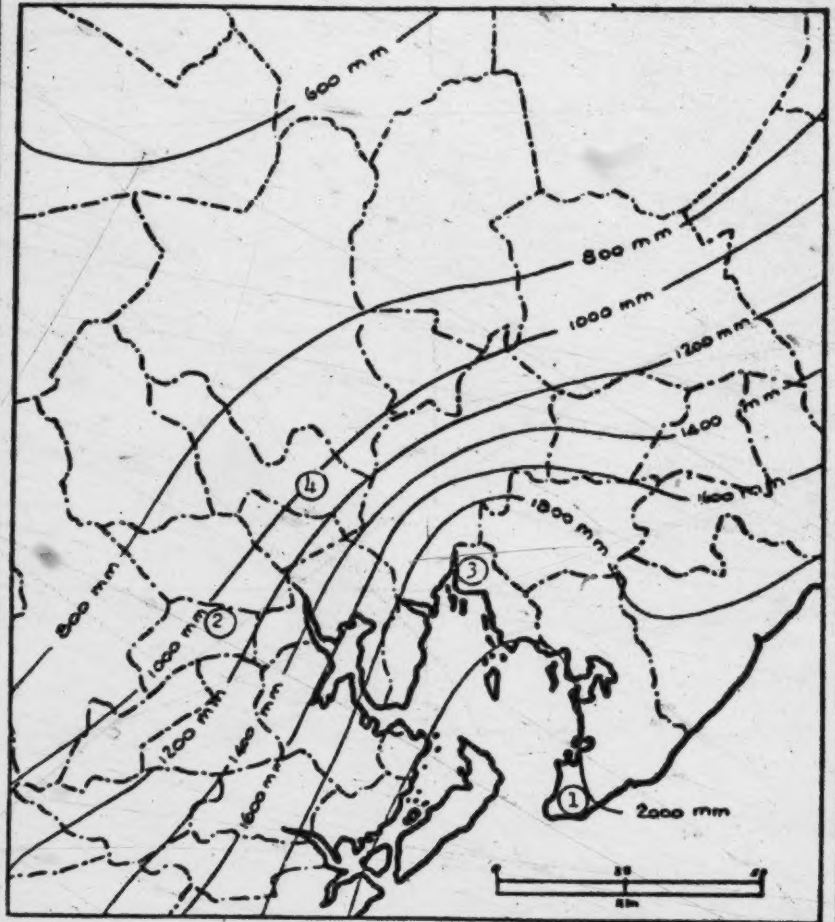
600 mm
800 mm
1000 mm
1200 mm
1400 mm
1600 mm
1800 mm
2000 mm
800 mm
1000 mm
1200 mm
1400 mm
1600 mm
1
2
3
4
Km

RECONCAVO OF BAHIA

Mean Annual Precipitation

Meteorological Stations:
1 - Salvador. 2 - Cruz das Almas. 3 - São Bento das Lajes. 4 - São Gonçalo.

MAP.7

132
133

Most of the lowland margins of the Bay have an estimated precipitation of from 1800 to 2000 mm. It may be inferred that the steep slopes rising from the ocean and the Bay have somewhat more rainfall and that some of the sheltered areas, such as the head of the Bacia do Iguape, have less. These inferred differences in rainfall do not seem to be great enough to have produced detectable contrasts in the natural vegetation or in cultivation practices.

The northwestern sector of the Recôncavo[22] is significantly drier, with less than half as much annual precipitation as the Bay littoral. The rainfall of this dry sector is estimated roughly—there are no weather stations in this area—at 600 to 800 mm. Orographic factors probably do not affect significantly the general rainfall pattern in this zone of tabular hills, but the windward slopes and eastern bases of the monadnocks seem appreciably more humid.[23]

The humid littoral and the sub-humid northwest of the Recôncavo are separated by a very steep gradient zone. Weather data from two stations within this zone, one at the northernmost point of the Bay and the other 21 miles westward, indicate a decline of 48 per cent in annual precipitation.[24] Although the isohyets on the map of annual rainfall are more or less evenly spaced over the transition zone, it is likely that the decline in precipitation is very rapid along the Intermediate Hill zone. The eastern intermediate hills are in moderately heavy coastal forest, but the western hills, like the uplands beyond, are in scrub-forest—presumably these differences reflect a rapid decline in precipitation.

In general, then, the Coastal Plain of the Recôncavo has from 1800 to 2000 mm. of annual rainfall. The Tabular Uplands and the northern Crystalline Uplands have less than 1000 mm. The Crystalline Uplands south of the Rio Paraguaçu have about 1200 to 1400 mm.

132 The Major Wet Season—March through August. From 60 to 70 per cent of the total annual precipitation of the Recôncavo falls in the six-month period from March through August, which is the growing season for most annual crops. Although of different values, the isohyets of the map of the major wet season follow closely those of the annual rainfall map. The margins of the Bay have about 1300 mm., and the dry northwest less than 500 mm. of precipitation during these six months. The scanty data which are available suggest that the decline in precipitation across the narrow transition zone from the head of the Bay westward is greater for the wet season (54 per cent) than for the whole year (48 per cent). This fact, even more than the rapid decline in annual precipitation, may help to explain the sharp transition in agricultural phenomena which characterizes this zone. The [241] eastern edge of this transition zone is, as will be seen, in sugar cane monoculture, and the western edge is in tobacco and manioc under a field-fallow system.

Along the coast about 70 per cent of the annual precipitation falls in this six-month period, but in the interior only 60 per cent. Since this is the only season of regular and relatively dependable precipitation, the drier interior area receives less of its annual precipitation under conditions of high reliability than does the coast.

The precipitation of this season comes from either intermittent heavy showers or slow steady, day-long rains. A day may open with cloudless sky and hot sun. In late morning clouds gather, and there is a quick, sharp shower, followed by sunshine, and then a second shower. This sequence continues until evening. More characteristic, if the period of field investigation for this study was representative, is a slow continuous rain from a low-hanging blanket of clouds, lasting a

[TEXT CONTINUED ON PAGE 40]

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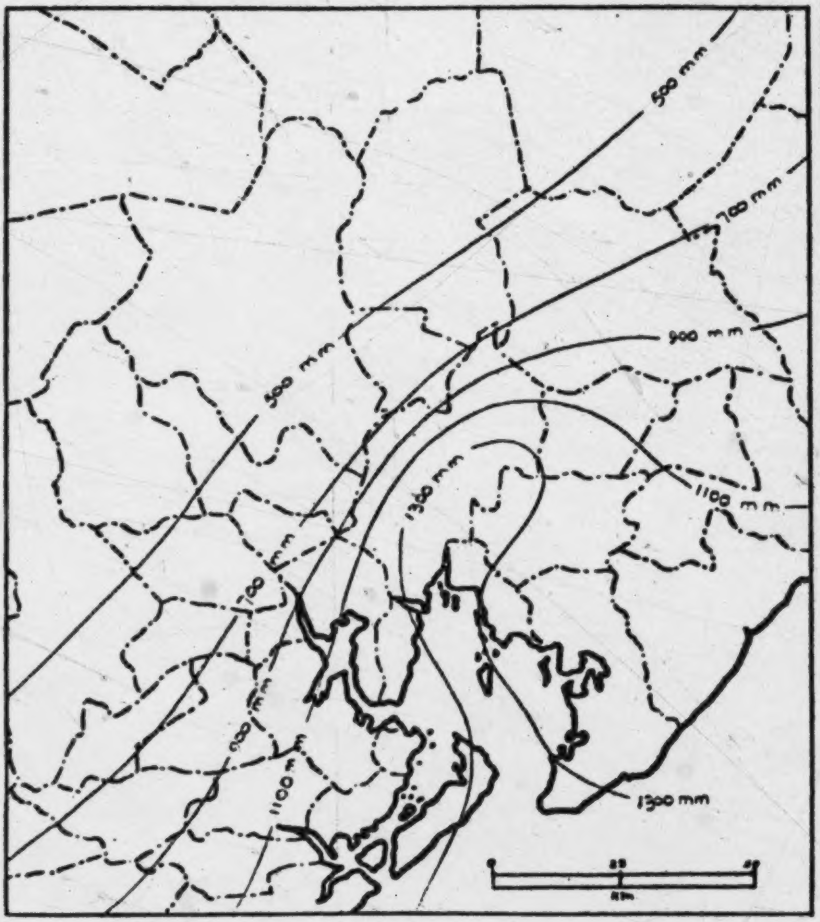
500 mm
500 mm
700 mm
700 mm
900 mm
900 mm
1100 mm
1100 mm
1300 mm
1300 mm
0
20
40
Km

RECONCAVO OF BAHIA

Major Wet Season Precipitation

March through August

MAP 8

132 day, several days, or even a week. In the interior these latter spells were cool, and the cool, damp weather appeared to restrict the general activity of the people.

Minor Wet Season. In addition to the major six-month wet season, in "summer" much of the Recôncavo has a short season of showers--the trovoadas (thunders) of October, November, and December. These irregular storms are generally confined to the Central and Southern Recôncavo and the coast further south, but they may occur occasionally in all of East Central Bahia. The mean values of isohyets on the map of the minor wet season are not to be taken as actual values likely to be encountered in any particular year--they are the averages of seasonal totals which have an exceedingly large range. These rains usually fall in heavy, irregularly spaced downpours.

At Salvador, and presumably along the rest of the coast, about 17 per cent of the average annual precipitation comes in this minor wet season. In Cruz das Almas, 29 per cent of the average annual precipitation comes in this season, but because these showers are so irregular they are of limited value to agriculture in the dry interior.

Along the coast the rains of this season come in the characteristic tropical sun and shower sequence, separated by long rainless periods. This pattern is also typical of the interior, but here there are occasional heavy violent thunderstorms lasting as long as half a day.

Departures from the Mean Pattern. The real significance of the mean annual and seasonal precipitation totals cannot be understood without reference to the annual and seasonal variations which they mask. In the context of this study the variations are approached as an agricultural rather than as a climatological problem. The

[TEXT CONTINUED ON PAGE 42]

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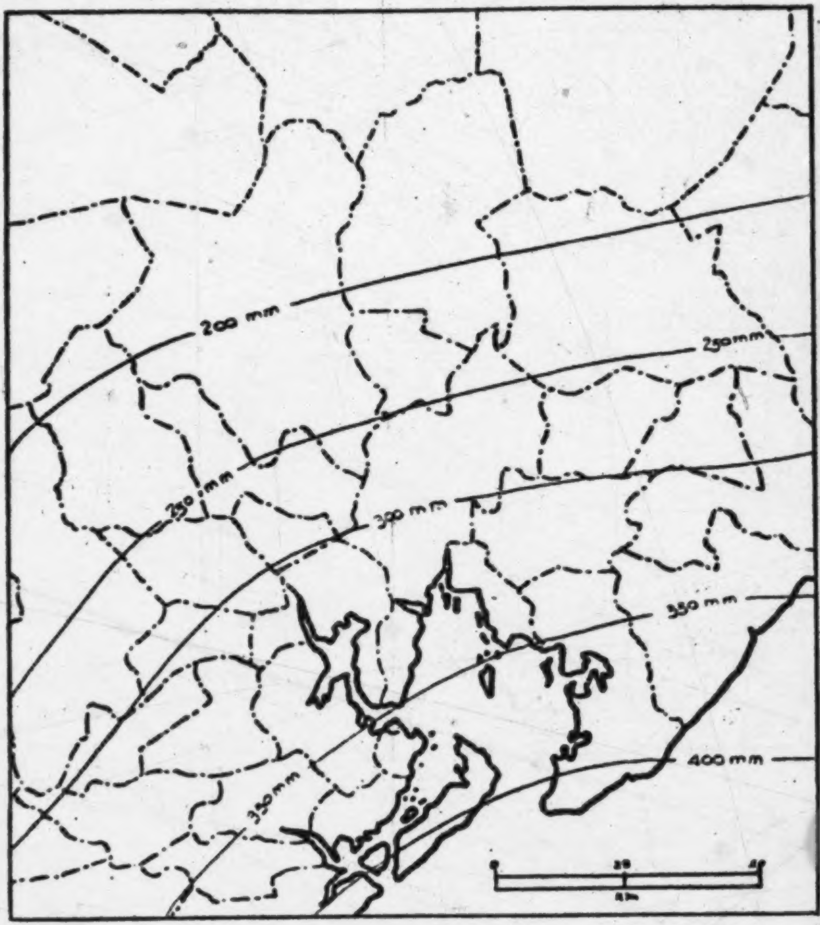
200 mm
250 mm
250mm
300 mm
350 mm
350 mm
400 mm
0
20
40
km

RECONCAVO OF BAHIA

Minor Wet Season Precipitation

October, November, and December

MAP 9

132 agriculturalist responds to rainfall not as a statistical mean but as
132 rain falling from day to day and month to month. It is beyond the
128 scope of this study to analyze the day to day march of precipitation--
indeed, the poor data available merit no more than a superficial analysis. By a study of deviations from the annual and seasonal averages, it is possible to draw general conclusions and to qualify the patterns on the climatic maps. The analysis below deals with the two meteorological stations of the Recôncavo with reasonably reliable data—Salvador and Cruz das Almas—and is for the years 1947 through 1952. This span includes both relatively wet and relatively dry years. The accompanying table (Table I) presents the complete summary of mean figures and deviations.

132 Though the movement of annual and seasonal totals for these two sections was similar, the deviations from the averages were significantly different, as the accompanying table (Table I) reveals. For the major wet season, Salvador had a mean deviation of 10 per cent, Cruz das Almas of 16 per cent. The greater mean deviation in the interior corresponds to the usual generalization of drier areas having a less reliable (more deviate) rainfall pattern. Thus the farmer of
[249] Cruz das Almas, cultivating tobacco and manioc with a minimum of
[244] seasonal rainfall, must cope with more serious deviations from the
"expected" average than the sugar cane planter in his zone of relatively plentiful rainfall.

Of the 36 wet season months (March-August for 6 years), 14 months had less than 100 mm. at Cruz das Almas; and 100 mm. falling
[249] in "well-distributed" showers, is the minimum monthly growing season
precipitation necessary for tobacco, the chief commercial crop.[25]

(TEXT CONTINUED ON PAGE 44)

TABLE I

132

SUMMARY OF PRECIPITATION DATA--SALVADOR, CRUZ DAS ALMAS

	1952	1951	1950	1949	1948	1947
Annual Precipitation - mm.						
Salvador	1846.4	1662.6	1741.4	2343.4	2074.2	2880.6
Crus das Almas	1010.6	845.8	948.3	1235.3	1319.3	1067.6*
March-August Precipitation - mm.						
Salvador	1510.0	1355.4	1136.5	1496.6	1645.6	1324.1
Crus das Almas	567.3	594.3	544.6	737.7	909.4	638.8
Deviation from Mean of 1411.4 mm. for Salvador and from 665.3 mm. for Crus das Almas - mm.						
Salvador	+98.6	-56.0	-274.9	+85.2	+234.2	-87.3
Crus das Almas	-98.0	-71.0	-120.7	+72.4	+244.1	-26.5
Per cent Deviation from Mean						
Salvador	+ 7	- 4	- 19	+ 6	+ 17	- 6
Crus das Almas	-15	-11	- 18	+11	+ 37	- 4
October-December "Trovoada" Precipitation - mm.						
Salvador	297.5	167.2	293.0	464.5	361.2	891.8
Crus das Almas	429.5	155.4	188.2	367.6	309.5	456.7
Deviation from Mean of 410.9 mm. for Salvador and from 317.8 mm. for Crus das Almas - mm.						
Salvador	-113.4	-243.7	-117.9	+53.6	-49.7	+480.9
Crus das Almas	+111.7	-162.4	-129.6	+49.8	- 8.3	+138.9
Per cent Deviation from Mean						
Salvador	-28	-59	- 29	+13	-12	+117
Crus das Almas	+35	-51	- 41	+16	- 3	+ 43

---

[128] *The records of the Crus das Almas station begin with April 1947. Therefore, the annual and March-August totals are fictional totals in which the mean January, February, and March figures 1948-1952 have been used.

132 For the period 1949-1952, inclusive, Cruz das Almas had the following number of rainy days:

March	12 days	June	18 days
April	16 "	July	17 "
May	24 "	August	19 "

Of the 24 months of the wet seasons of these years, three had less than ten rainy days, and four others had from ten to fifteen. Moreover, in the periods March-April and July-August there were a number of cases in which one-third or more of the monthly precipitation fell in one 24-hour period. It is clear that the desirable 100 mm. of well-distributed monthly precipitation is frequently lacking.

In contrast with the major wet season, the trovoadas of October, November, and December show much greater variation—a mean deviation of 43 per cent at Salvador and 31 per cent at Cruz das Almas. These two mean seasonal figures, though mathematically correct, rarely correspond even approximately to the actual seasonal totals of any particular year.[26] Moreover, the totals of particular seasons mask very capricious monthly and daily rainfall patterns. Usually an important part of these minor wet season rains comes as heavy thunderstorms. In 1952, for example, Cruz das Almas had 429.5 mm. of rainfall in the October-December season, of which 344.7 mm. fell in December—120.1 mm. in one day, indeed in one continuous downpour. If the 1949-1952 period was representative, these heavy (over 100 mm.) 24-hour storms are a typical December occurrence. Such rains are a greater threat to agriculture than they are a resource.

32
241 Advance and Retreat of the Wet Season. In agriculture the cultivation calendar is likely to be fixed: the seasons of planting and harvest are often kept without regard to the variation in climate. This is especially so in the Recôncavo, where custom is so compelling an aspect of life. Under these circumstances the timely arrival and

[TEXT CONTINUED ON PAGE 48]

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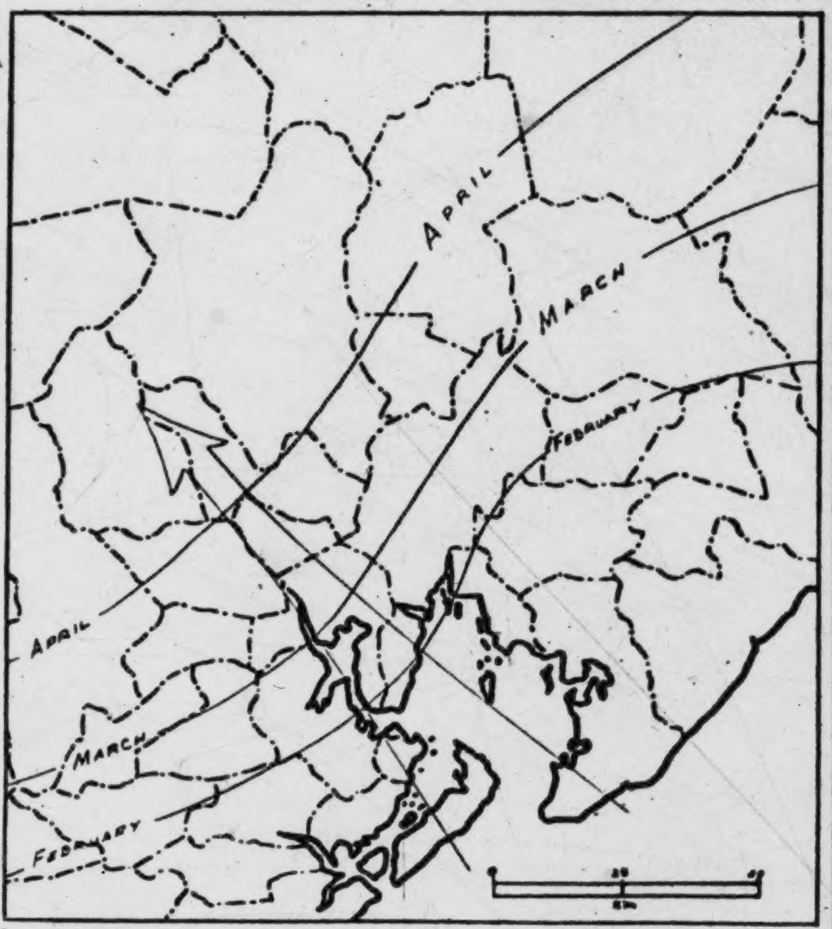
APRIL
MARCH
FEBRUARY
APRIL
MARCH
FEBRUARY
0
20
40
Km

RECÔNCAVO OF BAHIA

Monthly Advance of the Major Wet Season

MAP 10

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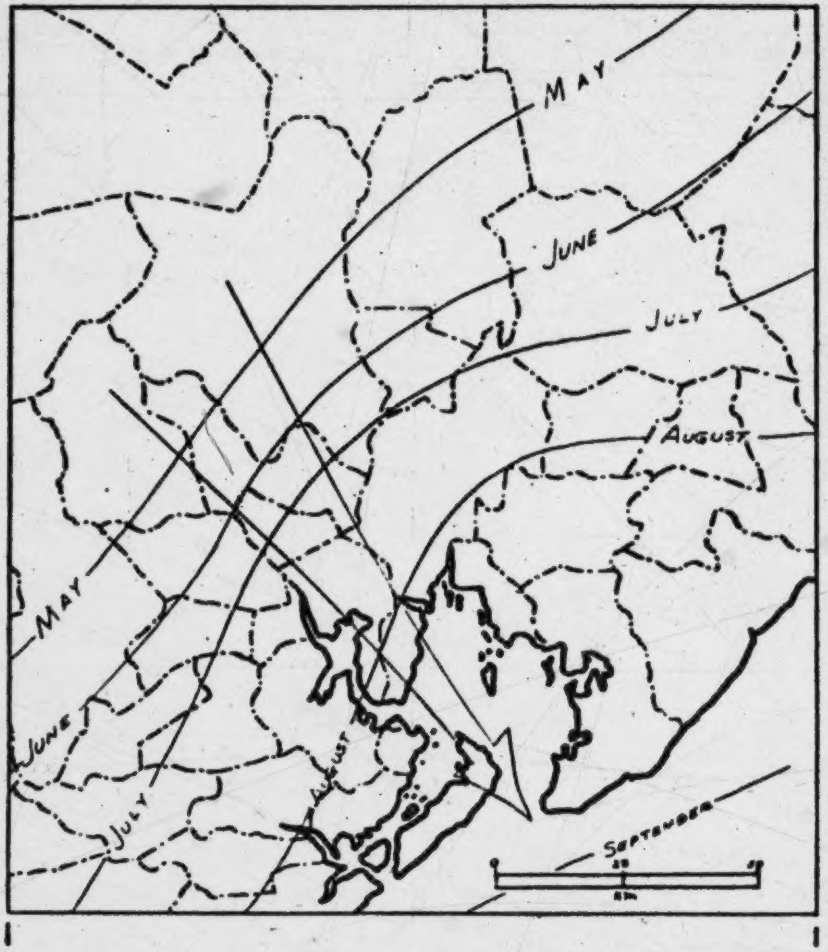
MAY
JUNE
JULY
AUGUST
MAY
JUNE
JULY
AUGUST
SEPTEMBER
0
25
KM

RECÔNCAVO OF BAHIA

Monthly Retreat of the Major Wet Season

MAP 11

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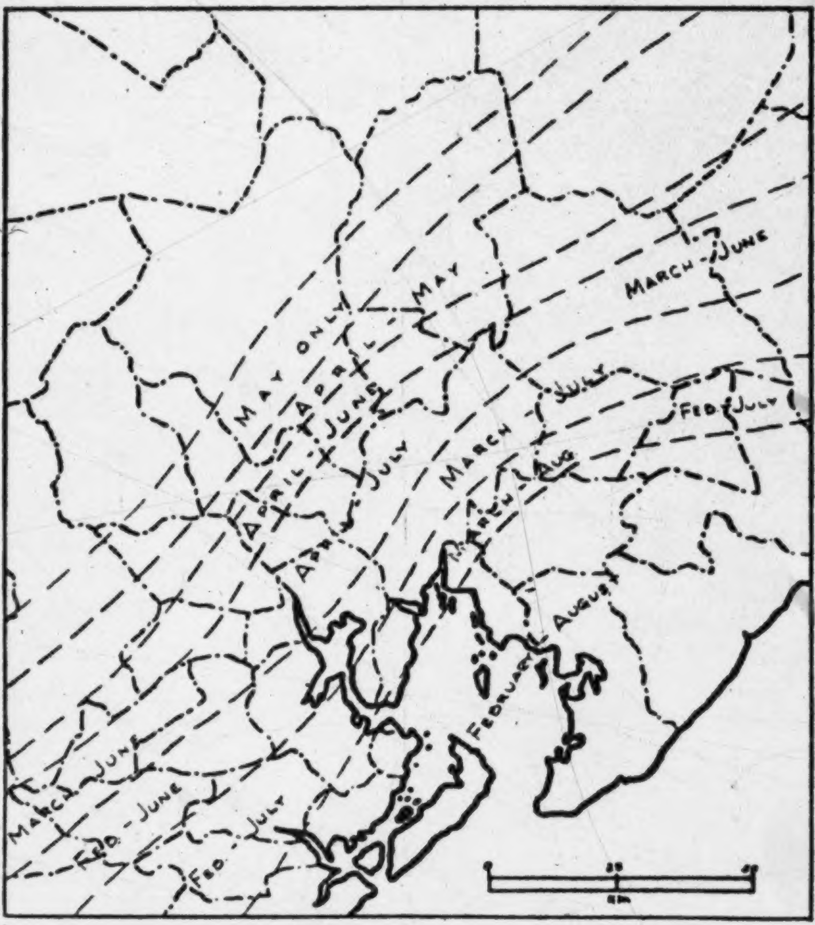
MAY ONLY
APRIL - MAY
APRIL - JUNE
APRIL - JULY
MAY
MARCH - JUNE
JULY
MARCH
FEB - JULY
MARCH - AUG
AUGUST
FEBRUARY
MARCH - JUNE
FEB - JUNE
FEB - JULY
Km

RECONCAVO OF BAHIA

Duration of the Major Wet Season

MAP 12

132 [241] departure of the wet season is of great significance. On the accompanying maps the advance, retreat, and duration of the wet season has been plotted in terms of 100 mm. of monthly rainfall.[27]

The wet season, defined as 100 mm. of rainfall monthly, comes in from the sea and crosses the Bay in January-February and moves across the Recôncavo through March and April. In May the retreat begins, and by September the wet season is over.

By combining the isopleths indicating advance and retreat it is possible to derive a map showing the duration of the wet season. On this basis the northwestern sector of the Recôncavo has no wet season or has only one month--May. The southern Crystalline Uplands have a wet season of three, four, or five months--April-June, April-July, or March-July, the shorter season occurring in the most interior section. The Tabular Uplands have two, three, or four months--April-May, April-June or March-June--of wet season. Most of the coastal lowlands have a seven-month--February-August--wet season.

The wet season outlined on the accompanying maps is the statistical mean of the wet seasons of six years--1947 to 1952. The accompanying table (Table II) shows the advance and retreat of the individual wet seasons at Salvador and Cruz das Almas. These data suggest that the advance and retreat of the wet season is highly irregular in the area around the Bay.[28] In the interior, if Cruz das Almas is representative, the advance and retreat of the wet season is more regular. However, in every year from 1947 to 1952 there was a dry month--with less than 100 mm. of rainfall--in the midst of the wet season of the interior.

[249] September Precipitation. September precipitation is a critical factor in the harvesting and processing of the two chief commercial

[TEXT CONTINUED ON PAGE 50]

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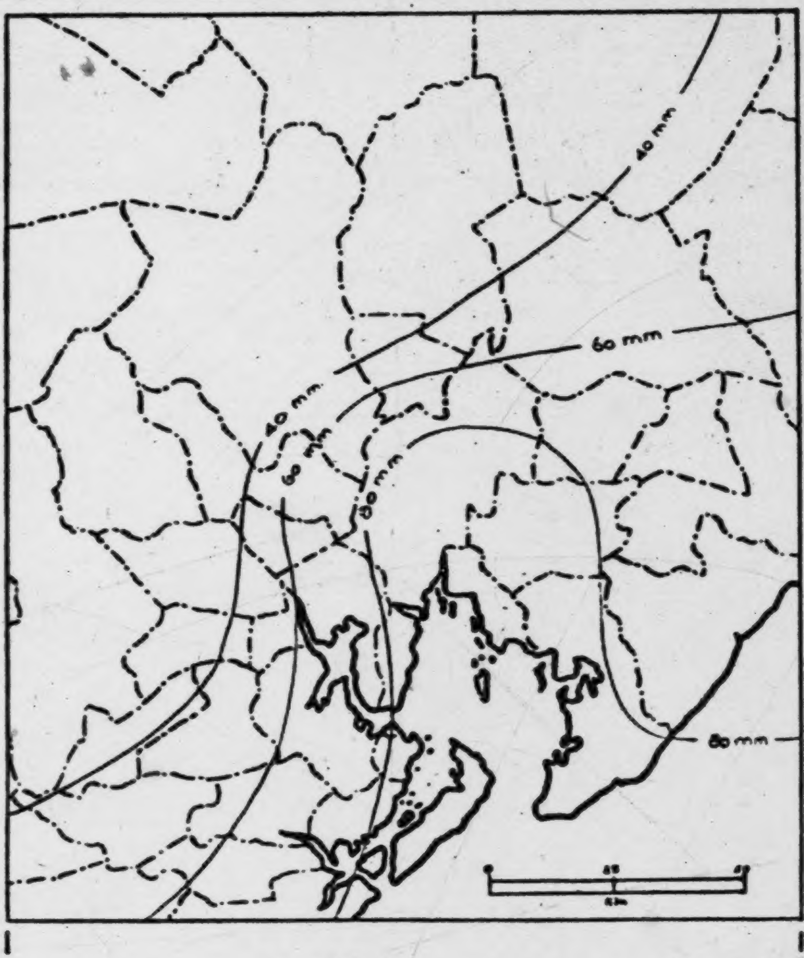
40 mm
60 mm
40 mm
60 mm
80 mm
80 mm

RECÔNCAVO OF BAHIA

Mean September Precipitation

MAP 13

TABLE II

132

ADVANCE, DURATION, AND RETREAT OF THE WET SEASON 100 mm. MONTHLY TOTAL FOR SALVADOR AND CRUZ DAS ALMAS

	Salvador				Cruz das Almas			
Year	Month of Advance	Month with less than 100 mm.	Month of Retreat	Total	Month of Advance	Month with less than 100 mm.	Month of Retreat	Total
1947	March		July	5		June	July	
1948	March		Nov.	9	April	May	Aug.	4
1949	April		Nov.	8	April	May	July	3
1950	Feb.		July	6	April	June	July	3
1951	March		July	5	April	May	June	3
1952	March		Aug.	6	March	April	Aug.	4
Mean	March			6-1/2	April	June	July	4

Note: There are certain discrepancies between these figures and those on the map. This results from the necessity of using mean monthly data on the latter.

TABLE III

SEPTEMBER PRECIPITATION—SALVADOR AND CRUZ DAS ALMAS

	September Precipitation in mm.	
Year	Salvador	Cruz das Almas
1947	37.7	44.2
1948	106.6	41.7
1949	168.1	60.2
1950	32.3	25.5
1951	76.9	62.7
1952	21.5	7.0

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products of the Recôncavo--tobacco and sugar cane. In the tobacco zone there must be enough rainfall so that the shoots will continue to develop but not enough to cause the already-harvested leaves to mold. In the sugar cane zone the moisture-retentive soil will nourish the cane through a relatively dry month. However, too much September precipitati

132 [249] will turn the cane fields into quagmires from which it is impossible to move the laden ox-carts.[29]

The table above (Table III) indicates that the September rainfall is highly variable both on the coast and in the interior, although Cruz das Almas has a slightly more consistent pattern for this month. The variability of September precipitation, as will be seen, raises serious agricultural problems in the Recôncavo. However, the greater
[249] variability of the coastal zone is in some ways a less serious problem than the lesser variability of the interior, for cane harvests can be temporarily postponed, but the cutting and drying of tobacco has an extremely critical time factor.[30]

Climate - Summary. The climate of the Recôncavo is dichotomous. The temperature of the region is fairly constant from day to day and from season to season. In contrast, precipitation is unevenly distributed--in area and in season--and is relatively unreliable. The cultivator of the Recôncavo may take the temperature for granted, but rainfall is an almost incessant concern.

Along the margins of the ocean and the Bay the climate is humid and the precipitation relatively reliable--it is a rare season when the crops of this zone suffer from drought. Because of the heavy invest-
[249] [257] ment in industrial equipment and labor, a long delay in harvest is costly to the sugar industry.

In general the uplands have marginal precipitation. Beyond the
[241] Recôncavo, in the sertão (backland) crop cultivation is scattered and precarious, chiefly on account of the low and uncertain rainfall. Although the uplands of the Recôncavo have more total precipitation than
[241] the sertão, they share in the pattern of uncertain rains. Several areas in these uplands are intensively cultivated, and the recurring severe

132 241 droughts and unseasonable heavy rains fall upon valuable, and vulnerable, field crops. Moreover, the cultivators of the Uplands are characteristically small farmers without large financial resources, so that the social repercussions of bad weather in this area may be marked.

311 137 [241] Wild Vegetation. Wild vegetation is a significant element in the landscape and an important resource for agricultural production in the Recôncavo. In 13 of the 21 municipios of the region, over 10 per cent of the total area, in 1940, was in mata, or forest, which was used as an agricultural resource.[31] In the southwestern third of the Recôncavo as the accompanying map indicates (Map 14), almost one-fifth of the total area was in this "exploited mata." It is inferred, through the addition of "unused and non-productive" land to the "exploited mata," that well over one-half of the total area of the Recôncavo was in wild vegetation.

137 192 In east-central Bahia three terms are used both colloqiually and professionally to designate the wild vegetation: (1) Mata is used generally to refer to the littoral evergreen forest of the Brazilian east coast. (2) Caatinga refers to the semi-deciduous scrub-forest of the northeastern Brazilian interior. (3) Agreste designates the transitional forest, intermediate in structure and position between the mata and the caatinga.[32]

137 Vegetation Types. The narrow coastal plain of eastern Brazil, from the Rio Paraíba—in eastern Rio de Janeiro state—to central Bahia, bears a heavy evergreen forest or selva.[33] The northern end of this forest belt is the Baía de Todos os Santos. Although the trees are lower and the species somewhat less diverse than in northern Brazil, the littoral forests of the Recôncavo and the Bahian coast farther south are a characteristic variation of the "tropical rain forest."

[TEXT CONTINUED ON PAGE 55]

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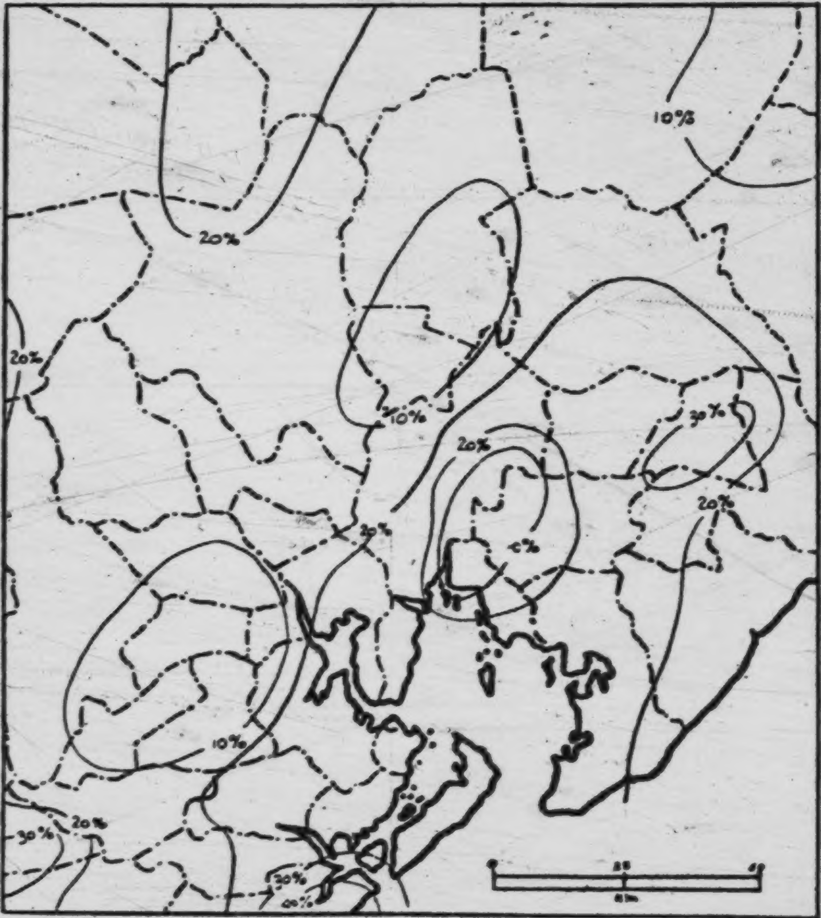
10%
20%
20%
10%
20%
30%
20%
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5%
10%
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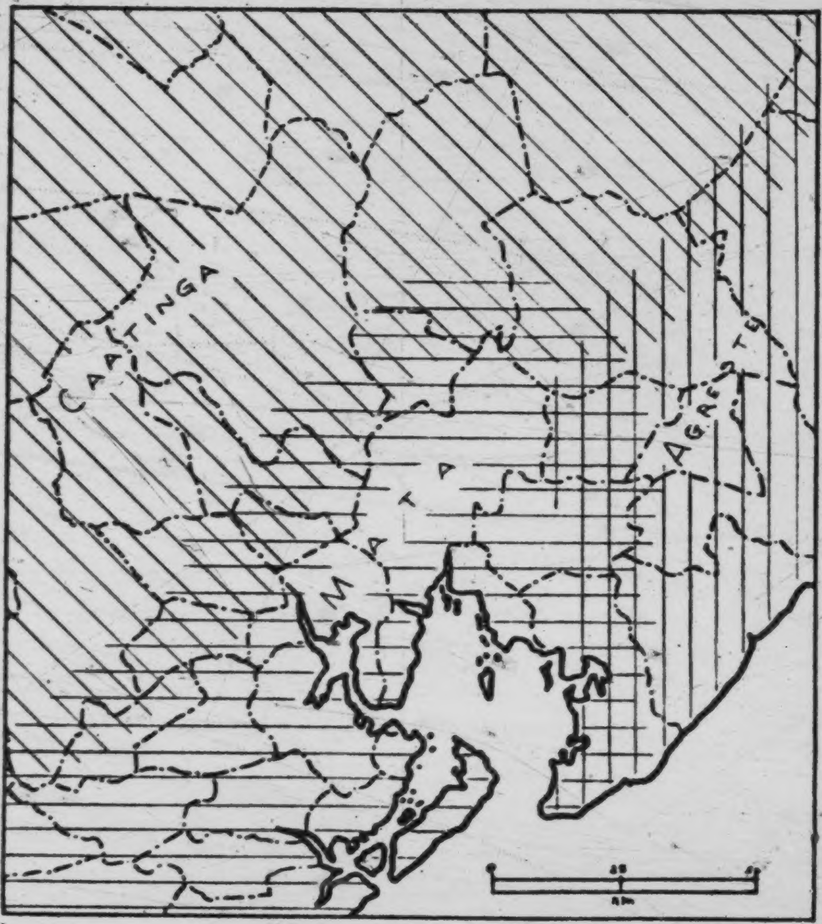
20%
30%
20%

RECÔNCAVO OF BAHIA

Per cent of the Total Area in "Exploited Mata"—1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 14


CAATINGA
MATA
AGRESTE
Km

RECÔNCAVO OF BAHIA

Vegetation Types

[127] Modified from a private map of Dr. Geraldo C. Pereira Pinto, Instituto Agronômico do Léste

MAP 15

137 Either because of some ecological limit or because almost all of the forest, even the tallest part, is second-growth, there usually are only two tiers of forest trees. Below the trees there is usually a mass of lianas and dense impassable brush. Often, however, the forest is too young to be fully developed, and there are vast areas of low second-growth trees protruding out of a jungle of climbers, creepers, low brush, and herbaceous plants. This low second-growth, called capoêira de mata, is especially common within the Recôncavo and is the dominant forest type in a zone bounded on the south by an arc from Salvador to Cachoeira and on the north by the limit of the littoral forest. The second-growth forest is characteristic also of the island of Itaparica. The forest of the mainland coast south of the estuary of the Rio Paraguaçu, both within and beyond the Recôncavo, is usually older and thus taller--this southern Bay coast is a zone of widely-scattered cultivation. The forest is interrupted in some places by open areas
137 of grass or low deciduous trees. These openings seem to occur in
311 areas of particularly sandy soils. The littoral forest is used primarily as a land reserve for a system of shifting cultivation and secondarily as a source of fuel (charcoal) and lumber. It is not used to any appreciable extent as pasture, even where the grassy openings are extensive.

137 North of the Bay the evergreen littoral forest gives way to the agreste--the semi-deciduous transition forest. The agreste is differentiated from the mata by its deciduous trees and shrubs and by the frequency of the breaks in the forest where open patches of grass are found. The dominant cover is, however, a very dense growth of gnarled brush and low deciduous trees. Above these rise scattered taller deciduous trees and occasional palms, especially the wax palms (such as carnauba). All the vegetation is sub-xerophytic. The agreste is

---

137 not unique to the coast of northern Bahia--it extends northward along the littoral almost to Cape São Roque, with the Recôncavo forming its [233] southern limit. In Bahia the grazing value of the *agreste* is not great, since the grassland areas consist of small and scattered patches and since there are relatively few herbaceous plants which are palatable to grazing animals.

The characteristic vegetation of the dry interior of the Northeast is the scrub forest, called *caatinga* or, sometimes, *sertão*.[34] Compared with the *agreste*, the grassy patches are more extensive, and the trees are lower. The tall vegetation of the scrub forest consists of thorny, xerophytic, deciduous brush and low trees and of low palms, especially the *licurí* (*Syagrus Coronata*). Cacti are very common in the *caatinga* of Bahia; the tall branched cactus is a very conspicuous element in the landscape, and there are several low, thorny cacti on [233] the scrub-forest floor. The cover also contains many herbaceous plants which are valuable forage.

137
132 Both the *agreste* and the *caatinga* show a phenomenal seasonal rhythm in response to the rainfall cycle. During the dry season in the *caatinga* the landscape is brown, bare of leaves, and hostile with thorns; the only green plants are the cacti. Much of the earth is bare, and its brown is indistinguishable from the bare trunks and twisted branches of the scrub trees. With the first rains a tremendous exuberance of green leaves, coarse grass, and succulent herbs [233] spring up, and the entire landscape is transformed. During this season the *caatinga* provides good forage for her[illegible] cattle, sheep, and goats. But this lush season is brief, and soon the *caatinga* is again brown. In some years there is no rain, and although the stubborn vegetation manages to survive in a dormant state, men and animals must leave for the more humid coastal forests.

137 The seasonal variation of the agreste is much like that of the caatinga, but the extremes of vegetative luxuriance are less marked. The scattered evergreen trees and shrubs make the agreste, in the dry season, less of a monochrome than the caatinga.

In addition to the general contrasts between the three basic vegetation types, there are lesser variations within each which are the result of differences in exposure, soil, and land use. These differences are clearly to be seen in the contrasting varieties of scrub forest. In the caatinga sêca (dry scrub forest) the trees are low, usually less than 4 to 5 meters, and the forest is open, with extensive patches of grass and of bare sand. It is most characteristic of sandy uplands in the Crystalline or Tabular Upland zones. In areas where soils, moisture conditions, land-use patterns, etc., are more favorable to forest growth, the characteristic vegetation is caatinga grande. The trees and tall cacti reach 7 to 10 meters, and underneath there is a continuous cover of tall herbaceous plants with little grass and no bare spots. In the agreste, formations similar to caatinga grande and sêca are found. Within the littoral forest, soil and exposure differences sometimes produce marked contrasts. [311] However, the intensive land use in the littoral forest has produced so much second-growth that it is not certain which variations result from environmental and which from human factors. In the littoral forest and to a lesser extent in the caatinga and agreste, there are poorly drained areas with open glades of coarse grass and rank herbaceous plants.

137
311 In the littoral forest, crop cultivation is leaving its mark upon the wild vegetation, producing a formation of low trees and dense ground cover. In those parts of the caatinga and agreste within the Recôncavo, both cultivation and grazing are constantly altering the "natural" development of the vegetation. Extensive areas of a growth

137 31 similar to *caatinga sêca* appear where soil and moisture conditions would seem to indicate *caatinga grande*. These areas are especially common where cultivation and grazing are intensive.

The wild vegetation of the Recôncavo is used for forage, timber, [313] and fuel. Only the *mata* is used for timber, and it is exploited only on a small scale. All three of the main vegetation types contribute toward supplying the local market with fuel—firewood and charcoal. The [314] *mata* is the principal charcoal source, especially in the forest zone northwest of the city of Salvador and along the Salvador-Feira de Santana highway. In the interior sections of the Recôncavo the *caatinga* and the *agreste* provide firewood for cooking and other household purposes. For grazing, the *caatinga* is far superior to the *agreste* and the *mata*, except when the latter is in the first stages of regrowth. Burning is employed extensively in an effort to increase the grazing value of the *caatinga* and *agreste*. At first this provides more grass and herbaceous growth, but after repeated burning and continuous over-grazing, there develops an impenetrable cover of thorny, tough brush, three to five feet tall, and quite valueless.[35]

13 *Conclusion - Physical Setting*. The analysis of the physical setting which is to serve as background for the discussion of agriculture in the Recôncavo does not reveal a homogeneous region. Rather it would seem that the Recôncavo is best visualized as a nodal region, with a relatively homogeneous but areally restricted core and a broad transitional perimeter. The perimeter is composed of several sub-regions, each with a distinctive transitional character. As a summation of [128] the physical setting, each of the sub-regions of the perimeter and core of the Recôncavo will be assigned a name, as a matter of convenience, with the physical elements briefly indicated for each:[36]

13 Central Recôncavo: a zone of Coastal Plain and lower Intermediate Hills north of the Bay. It is humid and, when uncultivated, forested. Its soils are of the Cretaceous series, chiefly clay and clay-sands.

Northern Recôncavo: a zone of dry, Tabular Uplands, with caatinga in the west and agreste in the east. Its soils are Tertiary sands except in the deeper valleys, where Cretaceous soils appear.

Northwestern Recôncavo. a zone of crystalline soils and caatinga vegetation. Most of the area is Crystalline Upland, but there are extensive sandy taboleiros. This is one of the driest sections of the Recôncavo.

Southwestern Recôncavo: The Crystalline Uplands south of the Rio Paraguaçu are less sandy and more humid than the Northwestern Recôncavo. This zone is mata in the east and south, caatinga in the west and southwest. Its soils are of the crystalline series but less sandy than is characteristic in the Northwestern Recôncavo.

Eastern Recôncavo: a small zone of relatively humid, agreste covered Tabular Uplands and Intermediate Hills.

Southern Recôncavo: The most diverse of the sub-regions it is composed of three sections: (1) the Bay littoral south of the estuary of the Paraguaçu; (2) the island of Itaparica; and (3) the peninsula of Salvador. It is forested and humid and is either rough Coastal Plain or Intermediate Hills, with mixed crystalline, Cretaceous, and Tertiary soils.

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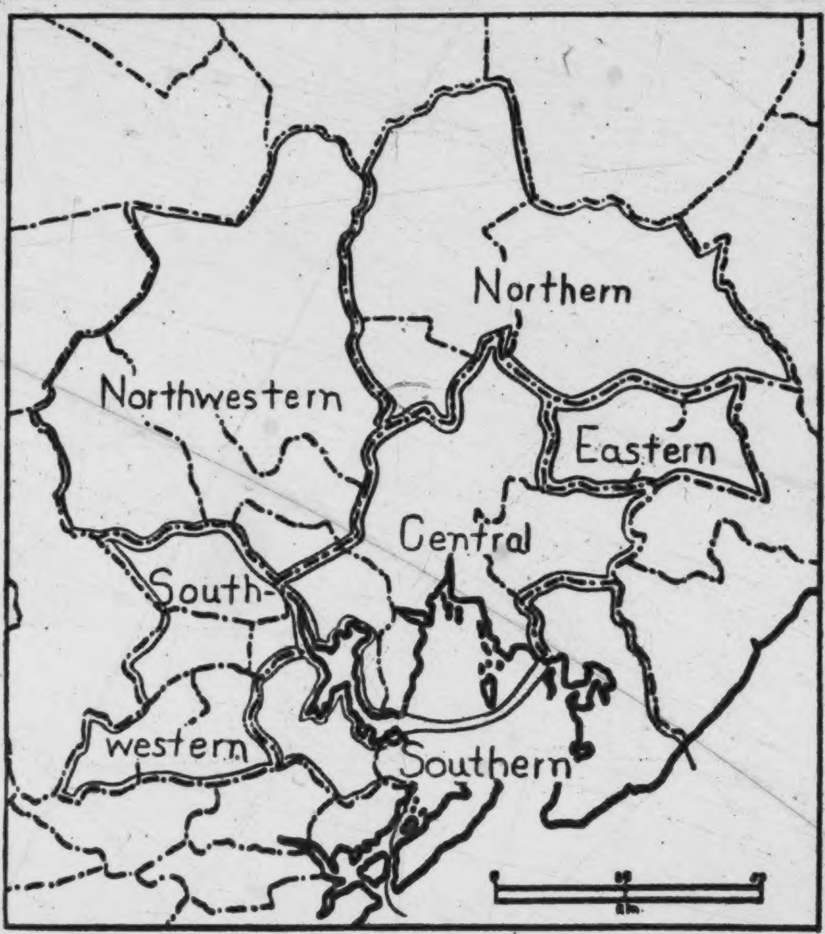
Northern
Northwestern
Eastern
Central
South-
western
Southern

RECÔNCAVO OF BAHIA

Major Physical-Political Sub-Regions

MAP 16

000 Footnotes - Chapter II.

[127] [114] [1] The general scheme of classification and the map which are used in the following discussion are based upon the field interpretation of small-scale geologic and topographic maps. The description of the landforms is based upon field experience in all *municípios* of the Recôncavo except Coração de Maria and all other *municípios* shown on the maps except Esplanada and Entre Rios. The basic sources include:

Gregorio Bondar, "Solos da Bahia, Sua Conservação e Aproveitamento," *Boletim Geográfico*, Vol. IX, No. 99 (June, 1951), pp. 243-281. Mario Martins de Oliveira, "Recôncavo." Map at scale of approximately 1:500,000 (Bahia: Organização Brasileira de Edições Culturais, [n.d.]). Conselho Nacional de Geografia and Departmento de Geografia, Engenharia Rural e Açudagem do Estado da Bahia, "Mapa Geral do Estado da Bahia." Map at scale of 1:1,000,000 (Rio de Janeiro: Serviço Gráfico do Instituto Brasileiro de Geografia e Estatística, 1953).

[2] Bondar, *op. cit.*, pp. 261-263, and attached map.

[3] These depressions very much resemble the small depressions encountered in karst regions. However, mechanical removal of soil materials and perhaps of rock from joints in the crystalline regolith, rather than solution, would be the most likely process.

[4] There are two Rios Jacuípe in the Recôncavo. One is the tributary of the Rio Paraguaçu mentioned above. The other is the main stream of the central part of the sugar cane zone, which drains eastward directly to the ocean.

[114] [5] Bondar, *op. cit.*, p. 253. In Brazil, Bondar is recognized as the outstanding authority on the soils of Bahia.

[6] Bondar, *op. cit.*, pp. 243-281.

[7] Sylvio Froes Abreu, "O Recôncavo da Bahia e o Petróleo do Lobato," *Revista Brasileira de Geografia*, Vol. I, No. 2 (July-September, 1939), pp. 57-83.

[8] Other sources used as a basis for the discussion and mapping of soils were: Companhia Energia Electrica da Bahia, *Geology and Climate* (Information Sheet No. 2, with geological information maps and sections furnished by Horace E. Williams. Bahia: Companhia Energia Electrica da Bahia, [1931], 28 pp. Orlando G. Teixeira, "Solos do Recôncavo da Bahia," *Boletim da Secretaria da Agricultura, Industria, e Comercio do Estado da Bahia*, Vol. XLIX, No. 11.

[9] Bondar, *op. cit.*, pp. 243-281.

[10] However, this presumed low fertility is not always reflected in lower actual yields.

[11] *Geology and Climate*, p. 10.

000

[12] Teixeira, in his "Solos do Recôncavo da Bahia," pp. 36 and 38, gives the following data (here summarized) for the soils of Paranagua, near Rio Fundo in the município of Santo Amaro:

	Per cent		Per cent
Clay	28 - 48	Total Nitrogen	0.224
Lime	19 - 34	Exchangeable Calcium ME	44.8
Fine Sand	23 - 41	Exchangeable Magnesium ME	6.8
Coarse Sand	1.6- 6.5	Clorides	0.011
Residual Humidity	2.6- 5	Phosphorus	0.055
Rock	3.6- 10.7	Potassium Cloride	0.585
Water Capacity	40 - 58	Sodium Cloride	1.1577

[13] The Rio Pojuca has a gradient of 1-1351 from Catuiçara in northern Santo Amaro to the cidade of Pojuca, near the point at which the river enters the crystalline. The Rio Traripe has a gradient of about 1-125 for its last 10 km. before entering the Bay. Its valley is deeply incised, with deep gullies on the slopes.

[135] [14] These rock fragments, usually much weathered, almost invariably were identified as either gneiss or granite in the exposures observed in the field.

[15] Teixeira, *op. cit.*, pp. 31-39.

[16] Bondar, *op. cit.*, p. 256.

[17] One of the islands of the group pendant to the middle of the north coast.

[171] [18] Thus this part of Brazil is not like many areas in the United States, where relatively uniform cultivation practices are conspicuously minimizing soils differences.

[114] [19] According to the Köppen system of classification the coastal Recôncavo has an Af (tropical rainforest) climate, and the interior an Aw (tropical savanna) climate. According to the Thornthwaite system, all of the Recôncavo has a CA'w (subhumid tropical with winter rainfall deficiency) climate. Glen T. Trewartha, An Introduction to Climate (New York: McGraw-Hill, 1954), plates II and III.

[20] Gilberto Freyre, Nordeste (Rio de Janeiro: José Olympio Livraria Editora, 1937), pp. 9, 21.

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[21] Official data from government weather stations was available for only four places in the Recôncavo—Salvador and São Bento das Lajes, in the município of São Francisco, on the littoral of the Bay; and Cruz das Almas and São Gonçalo in the western interior. Of these, only Salvador had maintained a continuous record over a relatively long period--including the years immediately preceeding the field study. There were a number of stations in adjacent parts of the state of Bahia, but none were close enough to the Recôncavo to be reliable guides to its climatic pattern.

The data upon which the climatic analysis of this study was based came from three basic sources: (1) Ministério da Agricultura, Departamento Nacional da Produção Mineral, Divisão de Águas Secção de Hidrologia, Atlas Pluviométrico do Brasil 1914-1938 (Boletim #5. Rio de Janeiro: Departamento Nacional da Produção Mineral, Divisão de Águas Secção de

127 Hidrologia, 1948). (2) Ministério da Agricultura, Serviço de Meteorologia,
132 *Normais Climatológicas* (Rio de Janeiro: Serviço de Meteorologia, 1941).
(3) Data made available by the meteorological section of the Instituto Agronômico Léste at Cruz das Almas,

132 The risks involved in using these data are considerable. Of the
20 meteorological stations in eastern and central Bahia, only 2 or
127 perhaps 3 are reliable. For the others, gross errors and even deliberate
114 falsification are notorious. Probably the data for Salvador is reasonably dependable, and during the field investigation for this study, there was opportunity to observe the conscientious attention to detail at Cruz das Almas.

The sheer lack of meteorological stations makes it necessary to infer most of the climatic pattern of the Recôncavo. It is fortunate that the two dependable stations occupy relatively representative sites in terms of the terrain and the land-sea relationship. Nevertheless, even the highly generalized climatic analysis of this section is offered with considerable hesitation. It is included in the study primarily as a base for agricultural research and, it is hoped, as a stimulant to a more adequate analysis of weather and climate for the Recôncavo.

000 [22] The *municípios* of Santo Estêvão, Feira de Santana, and Irará.

[137] [23] Often the slopes are more heavily forested than the surrounding tablelands, but it is not absolutely certain that this difference is unrelated to land use--the slopes are usually too steep for cultivation. In a number of *municípios* immediately to the east of this dry belt perennial or seasonal ponds were observed at the eastern or southern base of a number of monadnocks. Presumably these ponds are related to heavier precipitation on the slopes above.

[24] The mean annual precipitation of São Bento das Lajes (in the *município* of São Francisco) is 1947 mm. At São Gonçalo the mean annual precipitation is 1005 mm.

[25] According the advice of agronomists in the area. This approximation is based upon the general experience of the cultivators and not upon controlled experiments which could take into account varying temperatures, humidity, and soil moisture conditions.

[26] The mean of the deviations at Cruz das Almas was 33 per cent.

[249] [27] Except that 100 mm. is considered to be the minimum for tobacco cultivation, this exact figure has no particular significance. It is used here merely as a device to record the movement and duration of the season.

[249] [28] This seems to reflect accurately the climatic situation in the Coastal Plain, where sugar cane is grown, for the cane planters frequently complain of the irregularity of the end of the wet season.

[29] It is not possible to assign strict values for "too much" and "too little" precipitation in these agricultural zones of the Recôncavo. In the tobacco zone there is likely to be difficulty if the precipitation for September--or the following months--the cutting period, falls below

000 25 mm. The upper limit is less definite; humidity as well as rainfall is an important factor in determining the danger of molding. In the sugar cane area, in addition to September rainfall, the precipitation retained from the months preceding September is clearly a factor in soil moisture at harvest time and is thus related to the sugar content and the difficulties of harvesting.

[30] The specific harvest requirements of the crop and the debts of the small farmer combine to force the harvesting and processing--no matter how unfavorable the precipitation.

[113] [31] *Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II. Mata* as used in the census classification signifies forest in general, and perhaps also savanna. *Mata*, except in this specific discussion of the utilization of wild vegetation, will be used throughout the study to refer only to the littoral forest.

[127] [32] The map of wild vegetation of the Recôncavo is derived from a private map of Dr. Geraldo C. Pereira Pinto, of the Instituto Agronômico Léste. The descriptions of the three vegetation types are based upon his classification, but have been expanded and interpreted on the basis of field observations of this study.

[113] [33] Preston E. James, *Latin America* (New York: The Odyssey Press, 1952), pp. 413, 439.

[192] [34] *Sertão* is not strictly a vegetation type, for this term is applied also to all that part of the northeastern interior which is sparsely settled and under-developed, even where scrub-forest is not characteristic. In Bahia, however, *caatinga* and *sertão* are often used interchangeably to designate both the scrub-forest vegetation and the general area where the scrub-forest is dominant.

[35] Several vegetation maps show an area of tropical savanna as a continuous belt, parallel to the coast of Bahia, in such a position that it should cross the Recôncavo. For example, James, *op. cit.*, p. 413, map 81, "Northeast Brazil Natural Vegetation." This would raise the question of the utilization of these grasslands. However, savanna (*campo cerrado*) was not observed in the course of the field investigation in the Recôncavo, nor did the botanists or agronomists who were interviewed identify any local vegetation as *campo cerrado*. A grassland area of very limited size was observed in the northern part of the *municipio* of Salvador, on extremely sandy soil, but steppe rather than savanna seemed the appropriate term for this almost treeless enclave. Elsewhere in the Recôncavo trees rather than grasses dominate the uncultivated landscape, and the term savanna seems inappropriate.

[36] For a listing of the *municípios* in each sub-region see Appendix A.

CHAPTER III

EVOLUTION OF THE RECÔNCAVO

175 Introduction. The first permanent colony on the Baía de Todos os Santos was established by the Portuguese in 1549.[1] This colony, at the city of Salvador, was the nucleus of settlement in the Recôncavo. The Recôncavo was thus one of the early European colonies in the New World.[2] The first Portuguese colonists came to seek their fortunes in 175 178 181 433 241 the exploitation of the land. The ethos of the Recôncavo economy in the four centuries since its founding has remained fairly constant: the realization of the greatest agricultural profits with the least capital investment, the minimum conservation of land and labor, and the most grudging adjustments to changes in technology, markets, and the social 433 241 178 [181] and political order. Most of the million descendants of Portuguese colonists and Negro slaves who live in the Recôncavo today are imbued with the orthodox values of the exploitative agricultural society established here in the sixteenth and seventeenth centuries. Shifts in markets and in the relative importance of commercial products have not been accompanied by equivalent changes in the speculative and exploitative orientation of the society. In the initial period a market for Recôncavo agricultural products was assured because it had a virtual monopoly. The development of alternative and competitive sources for these products broke this monopoly and caused a continuous increase in the speculative character of agriculture in the Recôncavo. This area did not respond to the increased risk by diversifying its agricultural base but persisted in the same crops and the same methods of cultivation. Such change as did take place was in the form of reluctant, tardy, and minimal adjustments so that in many ways the

433 241 Recôncavo remains today a backward and traditional agricultural
178 society.

However, not all elements in Recôncavo life are static. In the field one was incessantly conscious both of the gradual course of change in this region and of the latent instability of its economic organization. Particularly in the last 75 years the agricultural economy of the Recôncavo has begun to shift--it is apparently in the throes of a drastic economic reorganization. It remains to be seen whether the traditional values will survive this economic revolution.
[128] The brief historical discussion to follow is not intended as a
substitute for a full-scale historical reconstruction. Its purpose
is to indicate the major patterns in the evolution of the Recôncavo.

175 *The Evolution of Colonial Agricultural Institutions.* By the
end of the initial half century of settlement (1600) those ethnic
groups, crops, animals, and agricultural institutions which were to
[567] become characteristic of the Recôncavo were already in evidence. Negro
[249] slaves were brought in on the heels of the first Portuguese settlers,[3]
[231] and sugar cane and cattle were also introduced at this time.[4] Tobacco
[244] [249] and manioc, produced by the Indians indigenous to the northeast of
[177] Brazil, were rapidly integrated into the colonial agriculture of the
[249] Recôncavo.[5] The combined sugar mill and plantation (*engenho*), which
[471] was the basic economic institution of the Recôncavo until the end of
the nineteenth century, already existed in rudimentary form before
1600.[6]

175 249 From the beginning the new colony in the Recôncavo had three
[244] important crops—sugar cane, tobacco, and manioc. It was the cultivation of sugar which the Portuguese crown and the initial settlers had

BB 175 249 in mind when they founded the colony of Bahia.

> Already enough was known of Brazil to hope that sugar cane
> would do well in it. The hot and humid climate of its
> coast would be highly favorable, and as for hands for work,
> BB [134] they counted mainly on the indigenous people who, as we have
> seen, were relatively numerous and peaceful on the coast.
> These perspectives were completely confirmed; the one factor
> of which they were ignorant before the attempt--the quality
> of the soil--revealed itself as supremely propitious, at
> some points at least, on the extensive coast. This was
> particularly the case in the extreme northeast, on the
> coastal plain occupied by the state of Pernambuco and on
> the contours of the Baía de Todos os Santos (the Recôncavo
> _Baiano_, as it would be called). These were not the only
> ones: in a general way all the Brazilian coast paid
> homage to sugar cane.
>
> It was on this base that the effective occupation and
> colonization of Brazil was initiated.[7]

By the end of the sixteenth century sugar cane cultivation had spread
at least as far as its present western and southern limits in the
Recôncavo, on the Paraguaçu and Jaguaripe rivers. Forty _engenhos_ were
engaged in the production of sugar.[8] The _engenhos_ were the nuclei of
BB 175 249 464 567 the economic organization of the colony. The cultivation of sugar cane
and the milling of sugar demanded a labor force too large to be re-
cruited from among the indigenous Indians.[9] This labor force was
supplied from the slave pens of Africa--chiefly on the Guinea Coast
BB [504] and in Angola. The city of Salvador, which had the advantage of a
commodious port and a central location among the slave markets of
Brazil, was the chief point of debarkation for these Africans.[10]
Estimates of the number of slaves imported and the number who remained
B 175 161 162 in Bahia vary over a wide range. In 1583, when the population of
Brazil was estimated at 57,000 people, 25,000 were listed as whites,
18,000 as civilized Indians, and 14,000 as Negro slaves. The Negroes
BB 162 563 [174] were concentrated mainly in Bahia and Pernambuco.[11] It seems likely
that in Bahia the number of Negroes was at least equal to the number
of whites. These two racial groups and their mixed-blood derivatives

162 compose most of the population of the Recôncavo today. In 1940 the
563 population of the Centro-Litoral of Bahia--the census area most closely
corresponding to the Recôncavo--had the following composition: white,
22 per cent; black, 29 per cent; and others, predominately mulatto,
49 per cent.[12]

The purchase of large quantities of slaves required the produc-
175
439 tion of a commodity which could be used as exchange in Africa. The
567
436 indigenous tobacco proved eminently suitable for this purpose. Although
276 rum apparently was used also in this trade, tobacco became the essential
[273] source of exchange for the slave traffic.[13] Bahia was the main area of
[249] tobacco production, and probably most of this production was localized
in the Recôncavo.[14]

175 The initial period of settlement saw also the incorporation of
244 manioc[15] into the agricultural economy as a staple. Like tobacco, it
433
was an indigenous crop. Thus one indigenous crop was adopted to
[567] purchase slaves in Africa and another to feed them in Brazil. By
1587 manioc apparently was being cultivated on a moderate scale in
Bahia.[16] A recurring theme in the history of the Recôncavo is the
shortage of this essential foodstuff.

In addition to the principal crops--sugar, tobacco, and
241
262 manioc--a number of lesser agricultural products were important in the
175 early history of the Recôncavo. Corn, beans, and bananas were grown
433
on a small scale and used to supplement the manioc diet. Other diversi-
231 fications of the diet were provided by meat and fish. Cattle were
maintained to draw the ox carts and to power many of the cane mills.
For lighter tasks asses and mules were used.

178 Out of this complex of Portuguese settlers and Negro slaves, of
249 old world and new world crops, there developed certain characteristic
433
agricultural enterprises. The engenho--old world in the origin of its

178 249 433 crop, technology, and market—was the most important of these enterprises. The sugar industry flourished in its new world setting and developed from the beginning an institutional character different from that of the old world, particularly in terms of land holding, labor, and the organization of production.

> 175 423 249 471 The regime of possession of the land was that of completely alodial properties. Among the powers of the *donatários* of the *capitania* was, as we have seen, that of disposing of the land, which they distributed among the colonists. The grants were as a rule very large, the lots measuring many leagues. This is understandable: the lands were abundant, and the ambitions of these pioneers, recruited at such a cost, were evidently not contented with small properties; it was not the position of modest peasants to which they aspired in the new world but as great *senhores* [gentlemen] and *latifundiários* [landowners]. In addition to this and more important, there was a material factor which determined the type of property established. The culture of cane is practical, economically, only on a large scale. Merely conveniently to clear and prepare the lands (a costly task in this tropical and virgin setting so hostile to man) made necessary the united energy of many workers: it was not an enterprise for small and isolated proprietors. This done, the planting, the harvesting, and the transportation of the cane to the *engenhos* where it was made into sugar was only profitable when done in large volume. In these conditions the small producer could not exist.
>
> It was above all these circumstances which determined the type of agricultural enterprise adopted in Brazil: the large property.[17]

175 241 471 433 The latifundia established by these colonists ideally were self-sustaining units producing food and sometimes clothing for the entire *engenho* community—free and slave. In fact, however, they often seem to have neglected food production for the cultivation of the universal commercial product--sugar cane. From the beginning of colonization a succession of regulations and decrees were issued to compel the cultivation of manioc. Recurrent food shortages suggest that these measures were not effective in the face of the "monocultural 000 mentality" of the *senhores de engenho* (sugar plantation owners). In

241 433 178 In contemporary Bahia chronic shortages of staple foods, particularly manioc, are characteristic of the zones of commercial agriculture.

175 249 [492] The equipment and technology of the *engenhos* was primitive. The cane was transported on the backs of mules or on ox carts to the mill where it was crushed in a crude press sometimes turned by water power but usually by animal- or even man-power. The cane juice was evaporated in large iron caldrons which were heated by fire made from wood. This type of processing was in general use in the Recôncavo for several centuries and still persists in some areas of the extra-Recôncavo backlands. [464] [567] The *engenhos* were operated almost exclusively with slave labor. Most of the slaves of Bahia are thought to have come from the Guinea Coast of Africa. [177] These "*Mina*" Negroes[18] had a relatively sophisticated cultural inheritance from Africa and undoubtedly made substantial contributions to the cultural development of Bahia.[19]

175 249 464 567 The Negroes were introduced when Indian slaves failed to provide the necessary labor supply, but they were rarely available in sufficient numbers and at a low enough cost to prevent chronic labor shortages. *Falta de braços* (literally, lack of arms) has been a perennial concern in the Recôncavo no less than elsewhere in Brasil. [162] The importation of hundreds of thousands of Negroes into Brazil--of which certainly a considerable number were settled in the Recôncavo--did not solve the problem.[20] In the early period most *engenhos* had from about 80 to 100 slaves, but by the eighteenth century some had as many as 1,000.[21]

175 563 567 From the beginning of settlement there was extensive miscegnation. The Portuguese settlers were predominately male, and they bred on a large scale with both Indian and Negro slave women. Some of the mestizo and mulatto children—chiefly the latter in the Recôncavo--retained the slave status of their mothers. Others were freed and sometimes occupied favored positions in their fathers' households.

175 565 The landed, slave-owning aristocrat was the master of Recôncavo society. The extended aristocratic family was the basic social, economic, and political unit of colonial society. The upper class of the Recôncavo, composed of inter-related family units, continued without substantial alteration until the twentieth century.

175 241 433 565 563 Despite the predominance of sugar cane and the *engenho* in the colonial Recôncavo--and in the literature on the region--other products and other institutions were important. It is clear that tobacco and manioc were the chief secondary agricultural products, but the development of the associated institutions is not documented. Presumably a class of small semi-subsistence cultivators occupied the lands unsuitable for sugar cane. This class probably was composed of whites lacking the capital for plantation agriculture and freed mulattoes and slaves--manumission was very common in the Recôncavo. The chief commercial product of these small farmers was *rolo* or *corda* tobacco (similar to a "twist" of tobacco),[22] and probably to a lesser extent *farinha de mandioca* (manioc flour). In addition, corn, beans, rice, and bananas were produced.

175 43 The colonial economy of the Recôncavo was not self-sufficient, in spite of the production of food crops and meat animals on small farms and on plantations. Near the beginning of colonization the livestock ranching industry, originating in coastal areas like the Recôncavo, migrated into the interior of the Northeast. Thereafter [231] a strong current of trade in animals, especially cattle, flowed into the Recôncavo from the São Francisco valley, from Ceará, and probably from the *sertão* of Bahia between the coast and the mountains. These animals were exchanged at the cattle fairs--notably at Feira de Santana--for the products of the coast and for imports from abroad.

175 231 After they had recuperated from the long drives, the cattle were used for both labor and food.

175 433 439 171 The colonial economy developed in the Recôncavo--in common with Pernambuco, Campinas (Rio de Janeiro), and lesser centers like Sergipe and Alagoas--was distinct from the economy of the south of Brazil. São Paulo, for example, was self-sufficient, buying little from abroad and having little to sell. Bahia and Pernambuco were almost completely dependent upon exchange with European markets, with Portugal acting as the middleman.

175 249 439 Economic Development from 1600 to 1850. By the middle of the seventeenth century most of the institutions discussed above existed in at least rudimentary form. They were nurtured by an expanding Brazilian commercial economy which enjoyed, for the moment, a virtual monopoly in sugar. Bahia was the leading province in Brazil in the export of both sugar and tobacco.[23] The production of these crops was centered almost entirely in the Recôncavo area of the state. The [567] tobacco was sent at first to Africa, in exchange for increasingly large numbers of slaves for the ever-greedy sugar industry. Slowly, however, a secondary market for Bahia tobacco developed in Europe. With few exceptions the sugar was marketed in Europe and at a high price. The engenhos of Bahia were the largest in Brazil, though still very small by modern standards.[24]

175 648 The development of the colony did not proceed smoothly. In the mid-seventeenth century Bahia was occupied for a brief period by the Dutch, but the development of the colony faltered only momentarily. On the other hand, the Dutch occupied Pernambuco and the north coast for a longer period. The subsequent transference of Dutch efforts to the West Indies was to have a profound effect upon the future of

175 648 the Recôncavo, for they took with them a newly acquired knowledge of sugar cane cultivation.

175 167 567 The eighteenth century opened with a series of disasters for the region. When word of gold discoveries in Minas Gerais (1704) reached Bahia, an exodus began.[25] Slaves were sold at exorbitant prices, and often masters and slaves together went off to the mines. The colonial authorities took drastic steps to halt the flight, but [1731] to no avail. The first quarter of the century ended with floods in the Recôncavo and the discovery of diamonds in the interior. There was a second exodus.[26]

175 171 249 In the meantime there were momentous developments in the West Indies. Sugar cane cultivation spread rapidly in the Antilles as the Netherlands and other northwestern European states which had been lucrative markets for Brazilian sugar began their own production in their respective West Indian colonies. In addition to the protected markets which the mother countries afforded, these new centers enjoyed sound economic and geographical advantages. As newcomers to the field of sugar production, the Antilles were free of both the antiquated equipment and the backward techniques which burdened Brazil, and they were closer to the major European markets.[27]

175 178 185 249 The Recôncavo was unable to counter these West Indian developments. In a century and a half of commercial development there had been few improvements in agricultural or industrial methods. There was no conservation of the soil. Only one variety of cane was known, and there was no attempt to develop improved strains. The mills continued to burn expensive wood rather than to use bagasse. Antique, low-yielding crushing mills continued to be used for extraction.[28]

175 249 178 439 At the end of the eighteenth century, however, developments abroad restored to the Recôncavo and to Brazil many of the advantages which it had formerly held in the international market. This

175 178 249 439 inaugurated a brief "golden age" in the evolution of the Recôncavo. The mythology which this age engendered is an integral part of the social and economic patterns in the present day Recôncavo. The collapse of the sugar economy in the West Indies, particularly in Santo Domingo in 1792, and the expanding urban markets in Europe had given, for a moment, a great opportunity to the sugar industry of Northeast Brazil. Moreover, an important supplementary market had developed in the mining areas of Minas Gerais. In the subsequent economic expansion to supply these markets, the Recôncavo became an even more important center of sugar production in Brazil.

175 249 565 567 471 The landed proprietors of the Recôncavo apparently took this resurgence as a vindication of their economic system.

> They squandered money like the fidalgos [landed, slave-holding aristocrats] that they were. They installed sumptuous dwellings and lived the life of a nobility. Each sugar factory was a community where hundreds of slaves were dedicated to extraction of wealth from the soil. Each of these communities achieved a merited importance. A little Agricultural World gyrated around the Big House, and the Chapel, with its Holy Administrator, [was] dedicated to the dissemination of Catholicism in the community. In time many of these "Engenhos" developed into villas, and were succeeded by the cities of today.
>
> Each of these "Engenhos," as these agricultural communities were called, produced everything that they consumed except luxury, and this was imported from Portugal in exchange for sugar, high-grade tobacco, cotton, and rare cabinet woods. The "Senhor" of the [466] Engenho was a veritable Feudal Baron, with the power of life and death over his black and mestizo slaves. He exercised the right of torture and flogging in proportion to the offenses committed. 175 249 471 565 [668] These sugar Engenhos, because of their collective and independent existence, produced a pride of origin, an attachment to the soil, that flowered into a hatred of the monarchial exploiters and became the dominating factor in the movement for independence.
>
> The fidalgos were essentially a product of the land, and spent the major part of their luxurious existence on their estates, attended by innumerable slaves. Their homes were built upon a vast scale and equipped with every luxury known to so simple a people. They also

> 175 249 565 [471] maintained splendid establishments, called Solars, in the Capital, to which they repaired in the winter season, June, July and August, for social diversion.[29]

[178] The above citation is characteristic of the present-day views
of many upper-class Baianos who identify themselves with this opulent
era of the Recôncavo social evolution. The mythology engendered by
the colonial sugar industry is outliving the engenho system. The
wealth, pride, and ostentation of these fidalgos is undeniable.
Within the limits of the provincial social environment, upper-class
life was luxurious indeed. Compared with the upper-class society of
the period in Europe or in the American South, however, social oppor-
tunities in the Recôncavo must have been rather limited. The casas
[342] grandes--if the surviving specimens can be taken as typical--generally
[489] were rather modest plantation houses. Transportation was difficult:
few engenhos had carriage roads, and travel was by horseback or
[571] palanquin. Social intercourse often was restricted to an ingrown
[484] local circle. Apparently many of the social needs of the upper class
could not be met within the rural Recôncavo so that trips were made
frequently to Salvador, Rio de Janeiro, and sometimes Paris.[30]

Little has been recorded of the way of life of the slaves and
175 249 567 poor freemen in the Recôncavo. It is significant that both apologists
and critics of slavery usually have agreed that the masters were
relatively clement in the treatment of their slave laborers. These
slaves were very valuable possessions, particularly after the British
began to suppress the slave trade. Because absentee ownership and
delegation of administration to people outside the family was not
usual, the masters and slaves were perforce in daily contact. Out
of these daily contacts between landholder and laborer, a relatively
personal relationship was developed. Within the household, relation-
[563] ships were even more familiar. In addition, some of the slaves were

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567 the offspring of master and slave and sometimes were considered as [563] members of the household.

A set of feudalistic inter-relations developed in the society, loosely defining the responsibilities and privileges of master and slave. Ideally the slave had the privilege, almost the right, to appeal to the master in person for assistance and advice. Manumission and the granting of the right to purchase freedom were common. At the [466] same time, the economic system was based upon involuntary labor. The slave was exploited, and the fruit of his toil went to maintain the luxurious existence of the small upper class.

175 The small freemen occupied a very inferior social and economic 565 position in this society. In the cities they became tradesmen or [463] [554] craftsmen, occupations without status. In the country some were petty dependents of the engenho, others established themselves as small cultivators. Since the sugar cane plantations dominated the central Recôncavo, it seems reasonable to assume that the small holders were segregated mainly in the outer zone.

175 In 1819--during the florescence of the Recôncavo--the population 161 162 of the comarca (district) of Bahia was 362,503. Most of this population was centered in the Recôncavo--200,000 in the lowlands north of the Bay--the sugar cane area--and 77,503 in the western uplands around Cachoeira--the tobacco area.[31] At this time the total population of Bahia was estimated at 592,908 and that of Brazil as between 175 4,000,000 to 4,500,000.[32] Salvador, with a population somewhere 633 162 between 100,000 and 130,000, was the largest city in Brazil and remained so until 1830.[33] The class and ethnic composition of the 175 563 population of this period is not clearly indicated. By some estimates, 565 567 over half of the population of Bahia was slave and over three-fifths

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was Negro. Other estimates state that less than one-third of the people were slaves.[34]

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Table IV, below, illustrates the economic organization of the sugar industry in the second quarter of the nineteenth century.

TABLE IV

TOTAL CAPITAL INVESTMENT IN SUGAR *ENGENHOS* OF BAHIA IN 1833

	In U. S. Dollars*	
	Per Unit	Total Investment
603 mills	$2,500	$1,507,500
48,240 slaves	150	7,236,000
60,300 oxen	20	904,500
23,100 horses	20	464,500
78,800 ha. of agric. land	46 (approx)	3,618,000
38,528 ha. of forest	23 (approx)	884,000
47 steam engines	3,000	141,000
62 water canals	3,000	186,000
Improvements of each mill	2,000	1,206,000
Total in Bahia		$16,147,500

*Conversion at $500 per thousand of *reis*, after Calogeras, p. 47 in footnote.

Source: Amaral, II, 84 after the Marquez de Abrantes.

The usefulness of the above data is limited by the ambiguity of several of its categories. "Agricultural land" could be either land cultivated or cultivable. The most serious problem of interpretation is the meaning of "improvements," since the value of these improvements is relatively high. It is reasonably certain, from the nature of the *engenho*, that these improvements are not technological advances but only those simple measures necessary to maintain the traditional structure--warehouses, corrals, slave quarters, etc. If the value of the house of the *senhor de engenho* is included in this figure, this would help to account for the relatively high figure for improvements.

Nevertheless, the data do represent certain significant elements of the mid-nineteenth century sugar cane system of the Recôncavo. Almost

175 45 per cent of the total investment was in slaves--labor costs, always
249 471 high, had been driven up by the suppression of the slave trade. The
454 relatively small proportion of steam mills is at once a reflection of
the continuing primitive technology and a sign of the improvements
which were to come later in the century. The value of production for
[433] this year was $1,213,000--a return of 6.6 per cent on the capital
investment.[35]

175 While the attention of the Baiano was focused on the sugar
249 industry during this golden age, tobacco unobtrusively was becoming
178 439 a primary commercial product. The suppression of the slave trade
deprived tobacco of its African market, but at the same time the
European market was expanding. The spread of cigar smoking in Europe
created an increasing demand for Bahian leaf. Ultimately the European
demand for quality leaf and the development of a Brazilian market for
the poorer grades were to carry tobacco to the leading position among
Bahia's commercial products.

175 433 To a very large degree, the mold of the colonial Recôncavo was
249 fixed in the sixteenth century. Its socio-economic system was nurtured
by the prosperous semi-monopoly of sugar production. While the south
[565] of Brazil was a raw frontier zone of migratory agricultural adventurers,
the Paulistas (natives of São Paulo) of early colonial times,[36] a stable
and wealthy aristocratic society was developing in the Recôncavo. In
[477] the early eighteenth century, when West Indies competition undermined
the sugar monopoly, the Recôncavo might have responded creatively to
the challenge, but failed to do so. The simultaneous mineral boom in
Minas Gerais drained away the more experimental elements and left
behind those who were less adventurous. Yet before the denial of
markets had disrupted entirely the old economic and cultural pattern,
the late eighteenth-early nineteenth century resurgence reaffirmed

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175 249 the traditional values. As has been seen, the re-opening of the markets
433 at first particularly benefited the Recôncavo.

NB The developments in the Recôncavo were shared only partially by
175 433 the other areas of the Brazilian Northeast. The colonial economy of
Pernambuco, the second major center in the Northeast, was not nurtured
NB EB [316] by a prosperity equal to that of Bahia. The booms in the mineral areas,
which had a disruptive effect on the Recôncavo, apparently were less
strongly felt in more-distant Pernambuco. In the south of Brasil,
EB 175 neither Rio de Janeiro nor São Paulo shared in Bahia's colonial
433 316 opulence until the nineteenth century. Moreover, the mining develop-
241 ments, which were a disturbing influence on Recôncavo society, had
a stimulating effect on agriculture and trade in the South, especially
in São Paulo. Although Minas Gerais attracted some settlers from the
South, in the main the mineral development acted as a stimulant to
agriculture. Thus the forces of colonial evolution in the Recôncavo
were distinctive variants of those characteristic of the whole of
Brasil.

BB The Last Hundred Years--1850 to the Present. The series of
175 external forces which contributed to the revival of the Recôncavo in
the early nineteenth century were destined to sweep it from the main
current of Brazilian development. The pressure of these outside
events were apparent in the Recôncavo as early as 1825, but it was
in the last half of the century that the region was relegated to the
subordinate position which it occupies today.

B There is a historical connection between the events which first
BB 175 bestowed and later took away Recôncavo prosperity. The collapse in
567 the West Indies sugar industry re-opened markets to Brazil, but it
648 [439] also ended England's economic interests in slavery. With no vested

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interest to deter her, Great Britain became in the nineteenth century the great anti-slavery force of the world. The British government began to press Brazil for a treaty to halt the slave trade. In 1826 a treaty was signed in which Brazil agreed to end the slave trade within four years. However, Brazil had just achieved its independence (1824), and the new national government was too weak to enforce the provisions of the treaty. After 25 years of bitter diplomatic exchanges with Great Britain, the Brazilian government succeeded in fulfilling its treaty obligations, and after 1852 almost no slaves were landed in Brazil.

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The end of the slave trade foreshadowed the end of slave labor in Brazil. The Northeast fought to preserve the system, but it was doomed not only as a result of extra-Brazilian pressures but also because of internal economic development. Just as in the eighteenth century the political capital had shifted from the North (Salvador) to the Central-South (Rio de Janeiro), so in the nineteenth century the economic center of gravity moved to São Paulo and adjacent Rio de Janeiro and Minas Gerais.[37] At first the developments in São Paulo imitated those of the Northeast, and a sugar industry employing traditional techniques was established. Almost immediately, however, the Central-South began to demonstrate an initiative unknown in the old sugar regions.

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At the beginning of the nineteenth century Bahia was exporting 12,000 tons of sugar, Pernambuco 8,400 tons, Rio de Janeiro 5,400 tons, and São Paulo 600 tons.[38] By mid-century Rio de Janeiro--chiefly Campos, near the mouth of the Rio Paraíba--was producing more sugar than any other province. In 1875, Rio de Janeiro was still the largest producer, with São Paulo second, Pernambuco third, and Bahia fourth. By the end of the century, São Paulo was the largest sugar

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By the end of the century, São Paulo was the largest sugar producer, chiefly supplying its own internal market, but also exporting in small quantity. The Recôncavo struggled to maintain even a poor fourth position.[39]

SB 175 567 [249]

The growth of the sugar industry in the South was not an isolated development but was one part of a general agricultural and economic expansion. The south of Brazil, which had gained new political power as a result of its expansion, began to press for abolition of slaves. Slave labor had not played a significant role in the south after 1850. In 1871 a law was passed providing for the gradual emancipation of slaves and the compensation of slave holders. The Northeast resisted bitterly but in vain. A new law passed in 1888 gave complete and immediate freedom to the slaves; and this law did not provide for compensation of the slave owners.

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The end of slavery threatened the Recôncavo in two ways. The suppression of the slave traffic destroyed the African trade in tobacco. The loss was soon more than compensated by the rapid expansion of the market for Bahian tobacco in Europe. By the 1870's tobacco surpassed sugar and became the chief export of Bahia. The effect of the emancipation on the sugar industry was much more far-reaching. The freeing of the slaves destroyed the labor base of sugar cultivation and processing. The gradual character of emancipation cushioned the blow somewhat, but it was still disastrous to the industry. Slaves left the plantations by the thousands, and there was no alternative source of labor. Sugar exports fell to a fourth of the pre-emancipation level. After a time the emancipated Negroes and mulattoes returned to the plantations and mills under a system of free labor. But Bahian sugar could not regain even a substantial part of its former importance.

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The world-wide expansion of sugar cane production, the development of the sugar beet, and the improvement of sugar technology had changed sugar from an expensive luxury to a relatively cheap semi-necessity. The sugar industry of the Recôncavo always had been based upon the production of small quantities of a high-value product. Only with great reluctance and considerable difficulty could it convert itself to cheap mass production.

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The Brazilian industry as a whole was unable to compete effectively in the international mass market. Brazilian exports in the early twentieth century dropped to one-half, even one-third of the nineteenth century level. At the London Conference in 1937, Brazil could claim as her quota only 1.6 per cent of the total international sugar trade.

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The Brazilian industry maintained itself behind a tariff wall. The more efficient and strategically located sugar areas of Campos (Rio de Janeiro) and São Paulo had access to growing local markets in the expanding Central-South. But Bahia had no sizable local market, and distance limited its access to the main Brazilian markets. Moreover, it was an inefficient, high-cost producer. Under these circumstances it could not compete in a free-market situation.

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For the sugar industry as a whole the difficulties of adjustment to the almost complete loss of foreign markets were increased by the necessity for sweeping technological reorganization.[40] Until

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the last quarter of the nineteenth century, Brazil's entire sugar production was manufactured in small and primitive engenhos which used the open pan method ~~and~~ produced dark, low-quality sugar. The development of the steam engine, vacuum pans, centrifuges, and filters had made possible a mill both larger and more efficient. Under the name of engenho central (central mill), the new industrial complex

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175 was introduced in Brazil after 1870.[41] As might be expected, the
257 more progressive Central-South led in the modernization of the industry.
178 The Northeast, and especially Bahia, lagged behind--further evidence
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[178] of Bahia's resistance to change.

BB The technological revolution had two historical stages:
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249 (1) *engenhos centrais*, and (2) *usinas*,[42] both of which still are
257 clearly identifyable in Bahia (as is their predecessor, the *engenho*
471 stage). In the *engenho central* stage the mills purchased cane from
178 *fornecedores* (suppliers). These suppliers were old *engenho* properties which no longer operated a mill. The resistance of the *fornecedores* to a strict scheduling of delivery and price soon caused dissatisfaction among the mill owners. They began to buy out the *fornecedores* and go into direct production of cane.[43] The source of cane is the basic distinction between the *engenho central* system and the *usina* system. Once the central mill grew most of its own cane, it became an *usina* and entered the second phase of the technological revolution. The sugar industry in the present-day Recôncavo is characterized by both systems. In practice the systems employed by the various sugar mills tend to include features characteristic of both types, and there
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[249] is no stereotype. The existing systems in Bahia are distinct from
[257] those of the Central-South, where the *usinas* have largely replaced the *engenhos centrais*.

NB In the twentieth century, as in the nineteenth, the Recôncavo
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175 persisted in its monoculture and was reluctant to accept technological
178 innovations in agriculture and industry. This conservatism was
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257 typical of most of the Northeast, but in Pernambuco the industry
471 began simultaneously to intensify its monoculture and to modernize its industrial plant, and this state ultimately became the largest sugar producing state of Brazil.

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175 In the first quarter of the twentieth century this competition
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257 of the more efficient and centrally located sugar industry of the
B Central-South threatened to bankrupt the Northeast.[44] Because the
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654 nation feared that a collapse of the sugar economy in the Northeast
249 would destroy the social and economic base of these states, steps
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B were taken to stabilize the industry. In 1933 the *Instituto do*
[647] *Açúcar e do Álcool* (Institute of Sugar and Alcohol) was created as
a semi-autonomous branch of the federal government. Its purpose was
to stabilize prices, maintain an equilibrium of production through
quotas, and to control foreign sale of sugar. The effect of this
program has been to subsidize the less efficient industry of the
Northeast at the expense of the industry of the Central-South.

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178 During World War II temporary disruption of the national
249 production quota system allowed the Central-South to expand, an
257 advance which it continued to maintain after the war. This expansion
43 limited the markets available to the sugar industry of the Northeast.
BB In Bahia the relative decline in sugar production, begun in the
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249 1860's, continued steadily except for a break during and following
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433 World War I. In 1952 the mills of Bahia produced only 60,279 tons
B of (white) sugar of a total Brazilian production of 1,785,017 tons.[45]
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While the sugar industry of the Recôncavo was losing markets
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175 in the initial half of the twentieth century, the tobacco industry
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249 was able to maintain and in some cases even to expand its markets.
43 Although the maximum level of export of Brazilian tobacco was
reached in 1902 (50,000 tons), the decline thereafter was only
moderate, and the export was stabilized, except for World War II,
at about 30,000 tons, 80 per cent of which was from Bahia. In 1865
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175 the first cigarette factory in Bahia had been founded.[46] Small
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472 operators had produced cigars for some time, but by the beginning

BB 175 277 472 of the twentieth century there were four cigarette factories and twelve cigar factories in the Recôncavo.[47]

B BB 647 249 654 656 As was characteristic for other products in Brazil, a semi-autonomous government organisation was set up to stabilize the tobacco industry in Bahia—the Instituto Bahiano do Fumo (Bahian Institute of Tobacco). Founded in 1935, the Instituto attempts to stimulate the production and improvement of techniques and quality, supervise marketing through a grading system, set minimum prices, and control export of leaf tobacco. Although the Instituto has not succeeded in changing significantly the techniques of the tobacco industry, it has been reasonably successful in maintaining production and price.

BB 175 178 249 245 Just as Bahia had been displaced from its leading position within Brazil, so in turn was the Recôncavo displaced from its exalted position within the state. Tobacco replaced sugar as Bahia's leading commercial product in the nineteenth century, but forfeited its position to cacao in the twentieth century. The replacement of sugar by tobacco was primarily a shift within the Recôncavo, but the rise of cacao brought to the fore Bahia's southern coast. In one sense, however, the Recôncavo retained its old centrality—Salvador remains today the leading political and economic focus of the state, even for the cacao trade.

BB 433 249 The continued importance of the Recôncavo in Bahia has been partially the result of the vested interests of the sugar and tobacco systems. BB 161 162 In addition, the Recôncavo remains today the leading center of population in Bahia, despite its relative decline. In 1872 the Recôncavo had at least 450,000 out of a total state population of 1,379,616. Thereafter the position of the Recôncavo declined, so that by 1940 only one-fourth of the almost four million people of the state lived in this region. However, the compact population

161 distribution and the vested political and economic interests of the
162 Recôncavo allowed it to continue as the dominant region of the state.

177 The Recôncavo has remained a conservative area in Brazil, and
178 within the state it seems to exert a strong traditional influence. On
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249 a national scale, however, the traditional values which are preserved
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181 in Bahian culture have been overridden by the aggressive dynamism of São Paulo and Rio de Janeiro. Moreover, the economic core of tradition in the Recôncavo--the sugar-producing upper class--is being progressively infiltrated and dominated by the new economic interests of the Central-South. The effects of these new economic interests are manifest in the administrative and labor problems of the sugar industry in the present decade.[48] New economic groups also are coming to the fore in the tobacco industry.

The technological revolution in the sugar industry and the emergence of a new "progressive" upper class have weakened but not destroyed the traditional orientation of the Recôncavo. The cultural patterns which have so successfully resisted basic change for almost four centuries will not easily give way. However, the issues have been joined, and already the old technology, the old upper class, and the old inter-class social fabric have been profoundly disturbed. In the long run it seems inevitable that the cultural patterns of the Recôncavo will have to accommodate many new values.

177 Not all the new social forces are restricted to the upper
178 class. More and more new technology, such as the automobile, new
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181 political and social institutions, such as labor unions, and new ideas from the South, brought through newspapers, radios, and travelers, have affected the lives of the lower classes. While the access of this group to new ideas is more limited than that of the upper class,

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178 its vested interest in the traditional system is weaker. Thus on all
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181 social levels the old Recôncavo is being threatened.

For the present, however, tradition is a continuing and power-
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181 ful force in agriculture and in the economic and social institutions
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433 which surround agriculture in the Recôncavo.

000 Footnotes - Chapter III.

[113] [1] See section by Pedro Calmon in Companhia Energia Electrica da Bahia, Curious and Interesting Facts Concerning the First European Settlement Made in the New World (Information Sheet No. 1. Bahia: Companhia Energia Electrica da Bahia, [1931]), p. 5. In addition to the specific quotations, much of the historical detail which follows on Bahia and the Recôncavo has been taken from this source.

[114] According to Calmon (see page 3) Amerigo Vespucci was in the first group of Europeans to enter the Baía de Todos os Santos (1501) and was the first to lead an expedition inland from the Bay (1503). It was not until 1534 that the first attempt at colonization was made; this initial colony was destroyed by hostile Indians. The next attempt was in 1549.

[2] Spanish settlements in the Caribbean-Gulf of Mexico area, such as Havana, Jamaica, Darién, and San Juan, were established between 1509 and 1515. In Brazil, São Vincente (near present Santos) and Recife were established in 1532 and 1531, respectively. Rio de Janeiro (1555) and Buenos Aires (1580) are younger than Salvador.

[3] Negro slaves were reported in Bahia in 1538, after the first settlement attempt but before the official founding of the permanent colony. João Pandiá Calogeras, A History of Brazil, trans. and ed. Percy Alvin Martin (Chapel Hill: The University of North Carolina Press, 1939), p. 21.

[4] Luis Amaral, Historia Geral da Agricultura Brasileira (São Paulo: Companhia Editora Nacional, 1939-40), II, 82-83; 192-193. In addition to the material specifically credited to Amaral, this three-volume agricultural history has been one of the basic sources for much of the historical analysis which follows.

[5] It is not clear whether these two indigenous crops were borrowed directly from the local Indians or were received indirectly via other Brazilian colonies.

[6] In 1583, thirty-six sugar mills were reported in Bahia. Amaral, op. cit., II, 82.

[113] [7] Caio Prado Junior, História Econômica do Brasil (second edition; São Paulo: Editôra Brasiliense Limitada, 1949), p. 40. This volume has been the basic general economic source for the historical analysis which follows.

[113] [8] Amaral, op. cit., I, 194, citing Gabriel Soares de Souza, Tratado Descriptivo do Brasil, [1587].

[9] In northeastern Brazil, as in a number of other areas in Latin America, Indian slavery failed as a labor source because of a basic lack of supply, bitter resistance to enslavement, and a high death rate in captivity. Calogeras, op. cit., p. 21.

[10] Ibid., p. 26.

[11] Ibid.

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[113] [12] Instituto Brasileiro de Geografia e Estatística, Características Demográficas do Estado da Bahia, No. 8 (Rio de Janeiro: Serviço Gráfico do Instituto Brasileiro de Geografia e Estatistica, 1949), pp. 59-80.
[114] The Zona Fisiográfica Centro-Litoral (Central-Littoral Physiographic zone) is one of a series of nine so-called physiographic zones used as major subdivisions in Características Demográficas do Estado da Bahia, No. 8. It includes all 21 of the Recôncavo municípios, and 17 others.

[13] Amaral, op. cit., II, 367.

[14] Amaral, op. cit., II, 366, and Calogeras, op. cit., p. 31.

[139] [15] Manihot utilissima, called cassava, manioc, or, sometimes, tapioca in English and mandioca in Portuguese.

[16] Amaral, op. cit., II, 11-12.

[17] Prado, op. cit., pp. 40-41.

[18] Minas, Yorbes, Geges, Hausa, and other Guinea Coast peoples.
[113] See T. Lynn Smith, Brazil: People and Institutions (Baton Rouge: Louisiana State University Press, 1946), pp. 168-169.

[794] [791] [19] African religions, for example, survive in a modified form in the candomblé (fetish) cults and in the supernatural conceptions prevalent in the Recôncavo.

[20] Neither the total number of slaves imported into Brazil nor the number brought to the Recôncavo is known. Calogeras, op. cit., pp. 27-28, estimates the number as 40,000 per year in the seventeenth century, 50,000 per year in the eighteenth and nineteenth centuries, or 14,000,000 for the 300 years of the slave trade. Another source has estimated that 1,200,000 slaves were imported between 1550 and 1850, a more reasonable figure. See section by Pedro Calmon in Curious and Interesting Facts Concerning the First European Settlement Made in the New World, p. 9. It is also asserted in this latter source that "more than half remained in Bahia;" this is less reasonable.

[21] Prado, op. cit., p. 46.

[206] [22] A rope-like twist of dark, often sweetened, tobacco wound in a large coil of 50 to 100 lbs.

[23] At the end of the seventeenth century Bahia was exporting 7,500 tons of sugar per year; Pernambuco 5,400 tons, and Rio de Janeiro 5,350 tons. At this same period Bahia exported 25,000 rolls of tobacco (perhaps 1,125 tons at 45 kg. per roll) compared with 2,500 rolls from Pernambuco and Alagoas. Calogeras, op. cit., p. 31.

[433] [24] Calogeras, op. cit., pp. 30-31, cites João Antonil, Cultura e Opulencia do Brasil, por sus Drogas e Minas (1711), who says that in 1711 the mean sugar export--which must have been virtually the entire production--per engenho in Bahia was 52 tons, in Rio de Janeiro 41 tons, and in Pernambuco 22 tons. The weight is given in arrobas by Calogeras.

[25] Amaral, op. cit., II, 84.

[26] Calogeras, op. cit., pp. 38-39.

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[27] Prado, *op. cit.*, p. 87.

[28] Prado, *op. cit.*, p. 97.

BB [113] [29] See section by Pedro Calmon in *Curious and Interesting Facts Concerning the First European Settlement Made in the New World*, pp. 5-6.

[30] The number of people who went abroad must always have been small. The upper class as a whole seems to have been extremely provincial, so that the few cosmopolitans were very conspicuous.

[31] Amaral, *op. cit.*, I, 91-92, citing Pizarro, Balbi, Manoel Antonio de Souza, and Spix and Martius for population data of the colonial period.

[32] Amaral, *op. cit.*, I, 73.

[33] See section by Pedro Calmon in *Curious and Interesting Facts Concerning the First European Settlement Made in the New World*, pp. 9. At this time Rio de Janeiro, which had been the national capital since 1763, became also the largest city.

BB [162] [34] Amaral, *op cit.*, I, 91, after Balbi, gives the following breakdown [1819]

	Total	Slave	Negro	Mulatto
White	192,000			
Indian	13,000			
Mulatto-Free	80,000			80,000
Mulatto-Slave	35,000	35,000		35,000
Negro-Free	49,000		49,000	
Negro-Slave	489,000	489,000	489,000	
	858,000	524,000	538,000	115,000

after Pizarro [1822]

Free	419,432
Slave	173,476
Total	592,908

[35] Amaral, *op. cit.*, II, 85.

EB [563] [463] [36] The Paulista *bandeirantes* were wandering cultivators, herdsmen, and slave raiders who moved out of São Paulo to penetrate into most of the interior of Brazil south of the Amazon Valley. Their society was, in comparison with that of the Recôncavo, equalitarian.

EB [635] [37] The Central-South as used here includes the states of Rio de Janeiro, Minas Gerais, and São Paulo.

[38] Amaral, *op. cit.*, II, 86.

[39] *Ibid.*, p. 98.

[40] The discussion of the twentieth century reorganization of the sugar industry and of the tobacco industry outlines the general lines of development. A fuller discussion will follow in the chapters on crops and cropland distribution (Chapter V), crop regions and systems (Chapter VI), and marketing, transportation and processing of agricultural products (Chapter X).

000 [41] Prado, op. cit., p. 255.

BB [196] [42] At this point the terminology of the sugar industry becomes even more complex. *Engenho*, *engenho central*, and *usina* all refer either to the industrial and the agricultural segments of the industry or to the mill alone. Indication will be made, where necessary, when the term refers to the mill only. *Fornecedores* (furnishers) are usually called *fazendas* (a type of plantation, although elsewhere the term might apply to a cattle ranch). Some *fazendas* were former *engenhos* and have sometimes retained that name. An additional complication is the fact that "*engenho*" occasionally is used as part of a name where there is not necessarily a functioning mill or plantation. In addition, *fazendas* may be owned and operated as part of a large *usina*.

3B [598] [43] This period was characterized by a bitter struggle, chiefly on the political level, between the *fornecedores* and the large mill owners. In the end superior economic resources, coupled with political influence, enabled the large mill owners to defeat but not completely dispossess the *fornecedores* in the Recôncavo.

B EB [16] [438] [511] [44] By 1940, over one-half of the people of Brazil lived in the central southern region. Because of the higher standard of living, the people in this area accounted for much more than one-half of the internal market for sugar.

B BB [113] [45] Conselho Nacional de Estatística, *Anuário Estatística do Brasil--1953, Ano XIV* (Rio de Janeiro: Serviço Gráfico do Instituto Brasileiro de Geografia e Estatística, 1953), p. 189.

[46] Amaral, op. cit., II, 369.

[47] *Ibid.*, p. 370.

[48] The problems will be discussed in the chapters on population (Chapter IV) and on marketing, transportation, and processing of agricultural products (Chapter X).

CHAPTER IV

POPULATION

162 [161] Introduction. In 1950 there were about one million people living in the 12,500 square kilometers of the Recôncavo--0.15 per cent of Brazil's area and about 2 per cent of its total population.[1] A more meaningful comparison is one with the effectively occupied coastal belt extending from Maranhão to Rio Grande do Sul, including the interior state of Minas Gerais.[2] The Recôncavo occupies 0.4 per cent of the area of these states and has a little over 2 per cent of the people.

[361] The relatively modest size of this population does not reflect adequately the great historical importance of the Recôncavo. The compact distribution and cohesion of this settlement make it a significant concentration of the people of modern Brazil.

161 162 The Recôncavo is the foremost nucleus of settlement in the state of Bahia in both the historical and purely demographic sense. With its one million people, it had in 1950 almost 86 people per square kilometer. There were 3,800,000 people in the rest of the state, but there was no concentration which had a size and density equal to that of the Recôncavo. The only other areas with even approximately equal density--Santo Antônio de Jesus and Nazaré--were contiguous with the 633 162 Recôncavo. The chief city of the Recôncavo, Salvador, was fourteen times the size of any other urban center in Bahia, and of the five next most populous cities--with a population range of 20,000 to 30,000--two were in the Recôncavo.[3]

128 The discussion which follows is divided into two parts. First the general character of the population will be analyzed in terms of general cultural development, race, class, family, and economic

128 orientation. This will be followed by a discussion of demography as a basis for the understanding of the agricultural economy.

181 The People of the Recôncavo - Introduction. The Recôncavo is the nucleus of a sub-culture which is a distinctive but integral part of the national culture of modern Brazil. Throughout Brazil the Baiano is characterized by a formality of behavior, an oratorical turn of speech, a sentimental attachment to the region of his birth, and a special accent which distinguishes him from the Mineiros, Paulistas, Gaúchos, or Pernambucanos of the other Brazilian regions.[4] These superficial distinctions seem to be a reflection of deep-seated differences in the culture and personality of the people who live in the Recôncavo and in the surrounding zone. On another level, the culture and personality of the people of the northeastern coast, including the inhabitants of the Recôncavo, is unlike that of the sertanejos (people of the arid northeastern interior--the Sertão).[5] Some of the culture and personality traits of the Recôncavo have a significant relationship to local agricultural phenomena.

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567 The Baiano of today, as has been seen, is the product of several centuries of historical evolution along lines distinct from those of Central and Southern Brazil and to a lesser degree from those of the rest of the Northeast. A significant feature of the development of the Recôncavo was the social cohesiveness which derived in a large measure from the original strength and periodic re-enforcement of the slave labor latifundia system. Although this system was operative in other regions of Brazil, it was generally less highly organized, and its vestiges have had less impact on contemporary society. In the Recôncavo it remained the chief cohesive social force until the end of the nineteenth century, and cultural and economic survivals of the system remain in force today.

B 433 178 BB 433 178 177 181 Economic and social changes in Brazil during the last century have had two important effects upon the relative position of the Recôncavo: (1) This historic region, in common with much of the Northeast, has lagged behind the new economic and social centers of the Central-South--the Recôncavo has become, vis-a-vis Rio de Janeiro, São Paulo, and the southern states, an under-developed area. (2) Many new, usually externally originated, cultural elements have been rapidly accepted in the Recôncavo, whereas much of the conservative ideology of the society has remained essentially unchanged.

BB 563 Racial Characteristics. The Recôncavo is a region of heterogenous racial characteristics--in every município each of the three basic racial groups (white, black, and mixed) comprises at least 10 per cent of the population. These racial categories generally do not correspond to social groups, nor is the Recôncavo in any sense a plural society. In linage, in social and cultural interaction, and in the daily business of earning a living the various people of the region are closely linked.

During three centuries of slavery hundreds of thousands of Africans were brought into Bahia, and the Negro element in the population is still large. As a result of this and the more or less continuous miscegenation "Baia [Bahia] and Negroid characteristics are very closely associated in Brasilian thinking."[6] On the basis of the 1940 census, over 70 per cent of the people of the state of Bahia were Negroes or mixed bloods. Only one other Brazilian state—Amazonas—had a higher proportion, and the national average was only 36 per cent.[7] Within Bahia the proportion of non-whites was highest in the Centro-Litoral (east-central Bahia), which includes the Recôncavo. In 1940, 78 per cent of the people of this census division were Negroes or mixed bloods.[8]

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TABLE V

RACIAL COMPOSITION OF THE STATE OF BAHIA AND THE RECÔNCAVO MUNICÍPIOS

	Per cent of Total Population - 1940		
	Whites	Blacks	Others
State of Bahia	28.74	20.13	51.11
Central Recôncavo:			
Santo Amaro	10.47	37.59	51.94
São Francisco	14.02	29.96	56.01
São Sebastião	12.74	32.76	54.50
Cachoeira	11.71	38.51	49.78
Northern Recôncavo:			
Coração de Maria	15.58	37.18	47.23
Irará	12.50	34.07	53.43
Alagoinhas	22.88	24.41	52.69
Northwestern Recôncavo:			
Feira de Santana	12.16	28.31	59.53
São Gonçalo	10.63	48.19	41.18
Conceição da Feira	15.24	47.46	37.16
Santo Estêvão	17.66	31.38	50.95
Southwestern Recôncavo:			
Muritiba	10.48	40.48	49.03
Cruz das Almas	16.34	36.84	46.82
Conceição do Almeida	19.63	30.54	49.83
São Filipe	25.32	30.66	44.02
São Félix	15.78	33.33	50.87
Eastern Recôncavo:			
Catu	23.78	22.58	53.64
Pojuca	22.69	21.90	55.41
Southern Recôncavo:			
Maragogipe	37.40	23.05	39.53
Itaparica	14,60	26.99	58.38
Salvador	35.08	26.33	38.54

Note: The difference between the totals of these figures and 100 per cent consists of a very small percentage of Orientals.

Source: *Características Demográficas do Estado da Bahia*, 1940. Rio de Janeiro, 1949.

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From the above table (Table V) it can be seen that "whites" compose less than one-third of the total population of all Recôncavo *municípios* except Maragogipe and Salvador. Over one-fourth of the population is classified as "black" in all but the three *municípios* of Alagoinhas, Maragogipe, and Catu. Those persons classified as "others"--*mulatos* and *mestiços*--account for 40 to 60 per cent of the population

563 162 634 in all municípios but three--Maragogipe, Salvador, and Conceição da Feira. The variations between the individual municípios reflect: (1) concentrations of Negroes in the sugar cane area; and (2) concentrations of mixed-bloods, some of which are mestiços, on the inland borders of the Recôncavo and around the sugar zone. Salvador has a relatively larger white group--35 per cent--and a lower proportion of mixed-bloods--38 per cent.

563 565 With the possible exception of the prevailing white upper class, no significant cultural segment of Recôncavo society can be defined in racial terms. The lower class is composed of Negroes, mixed bloods, and whites--it is an economic, not a racial unit. The upper class is predominantly white, but this primarily reflects the historical economic advantages of the white people and only incidentally the social advantages of a lighter skin. Given wealth, dark-skinned people enter the upper class with little--but nevertheless perceptible--difficulty on account of their racial background. Baianos say "a rich man is not a Negro." If a Negro or mulato is wealthy, many people think of him as being light-skinned. The cultural range between the upper and lower class in Recôncavo society is great. Neither the simpler cultural system of the lower classes nor the sophisticated upper class culture is associated with race per se.[9]

565 Class Differences. Recôncavo society is characterized by a strongly developed class structure and little vertical social mobility. In a recent anthropological survey of class in Brazil, "one's income, the kind of work one does, one's education, one's family (in varying degrees) and finally, one's physical [i.e. racial] appearance" were the main criteria used.[10] The study made by Hutchinson of a small community in the Central Recôncavo sugar cane area in 1950-51 distinguished four social strata.[11] Among the findings of the study were the following:

565 563 [162] Five families, out of a total community population of 4,269, composed the aristocratic upper class. All five were plantation-owning families, resident on their fazendas or engenhos. All were closely linked either to each other or to other aristocratic families in the sugar-cane area and in Salvador by marriage [and were linked through [871] these to the national Brazilian upper class]. All were relatively well educated, and most of the males had university degrees in law, engineering, or medicine. All were of Caucasoid appearance.

The second class consisted of local bureaucrats, plantation administrators, sugar-mill technicians, merchants, and professional people of the only small town (cidade, a sort of county seat). For [871] the most part they were descendants of local people. The educational range was from university educated doctors to illiterates. Members of this class included pure Caucasoids, brancos da terra (whites of the land, or whites with known or suspected Negro ancestors) mulattoes, and some Negroes. This was called a local upper class to distinguish it from the regional, aristocratic, upper class.

The third and most numerous class was that of "the people" (gente). This was the class of those who did physical work. They were plantation and mill workers, craftsmen, and fishermen. In the urban segment of this class, in the cidade, there was a fairly continuous gradation of standing within this class, with each occupational group occupying a defined social position. In the agricultural segment there is also a definite heirarchy. The feitor (foreman) and the vaquéiro (cowboy) form an upper level. On the basis of the sequence of promotion and the degree of authority elsewhere in the sugar zone, the balançéiro or weigh master also belongs in this group. The bulk of the plantation workers form the next

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563 sub-stratum. Most of the rural and urban workers who fell within the third class were Negroes, mulatos, or dark-skinned mestiços.

At the bottom of the social heirarchy was a small group of cidade dwellers of menial position. These were porters, water carriers, washerwomen, domestic servants, and odd-jobbers. This class was chiefly Negro or mulatto, but there were some brancos da terra.

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369 The homes of the aristocratic upper class were all located on fazendas outside the cidade. The lowermost class was entirely urban. The other classes were both rural and urban in distribution. The aristocratic upper class did not intermarry with, nor receive new members directly from, the local upper class. There was some social mobility between the various levels in the lower class.

The above analysis of class corresponds quite closely to the general class structure throughout the sugar-cane zone and with modification to Salvador. The composition of the upper class of Salvador is more complex. Here the upper stratum is composed not only of landed aristocrats and their dispossessed descendants but also of urban capitalists and speculators. These latter often have agricultural landholdings, but usually as an investment rather than as a way of life. These people are generally newcomers to the upper class. The professions also have their place in the upper class, since members of the families of aristocrats, dispossessed aristocrats, and capitalists are often prominent doctors, lawyers, and, in recent years, engineers.

The more complex composition of the upper class in Salvador is a product of the economic decline of the aristocratic family and the concurrent rise of powerful business interests. This development reflects the growth of a greater degree of social mobility among the upper class of Salvador than is characteristic of the sugar cane area.

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To the extent that the economic and social position of the aristocratic group is usurped by the new upper class elements in Salvador, the pre-eminent role of the aristocrats in the sugar cane zone is threatened.

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In Bahia the strong aristocratic class derived from the sugar cane system. Outside the sugar areas a well-defined aristocratic class is lacking--the upper level in these areas is occupied by groups similar to the local upper class of the sugar zone. In the tobacco and manioc zones, around the sugar cane area, the members of the local upper class, including those with urban residences, are very intimately involved in agriculture. In this agricultural zone the upper class has few personal or family connections with the Salvador upper class.

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The lower class outside the sugar areas is composed of cultivators and urban workers and probably has more gradations and a less heirarchical structure than is characteristic of the sugar area. The cultivators are semi-independent small farmers, renters, and share croppers of varying dependence and social position. Social mobility appears to be about equal to that in the corresponding stratum of the sugar zone.

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Compared with the United States, the opportunity for educational and cultural development in the lower class is much more severely restricted by the prevailing poverty. Effective literacy is low among the manual laborers of city or countryside. The middle groups and local upper classes are usually, but not universally, literate, but for the most part their cultural horizons are limited. In contrast, the cultural opportunities and outlook of the aristocratic and big-business class is both cosmopolitan and sophisticated. Education in Rio de Janeiro, São Paulo, Europe, or the United States is not uncommon. Nevertheless, large segments of this class remain distinctly provincial in their cultural orientation--this is particularly true of the decadent aristocratic families.

BB 565 184 It is easy to over-emphasize the cultural differences between
classes and between areas within the Recôncavo. It is possible to
assemble an array of significant cultural differences on a class or
areal basis, as has been done above. But underneath these differences
there seems to exist an implicit and almost universally shared way of
life. As far as most of the people are concerned, Recôncavo society
is probably best viewed as a cultural continuum of great vertical
range, in which extreme positions are occupied by the cosmopolitan
upper class of Salvador and the more remote agricultural people of the
BB 184 lower class. The validity of the concept of the Recôncavo as a
cultural region is recognized by the anthropologist who studies
Recôncavo society and by Brazilians who characterize the man of the
BB NB 184 Recôncavo as a particular type. This Recôncavo continuum or sub-culture
is a part of what Wagley has called the cultural region of the
Northeastern Coast. Also included within this region are coastal
Pernambuco, Alagoas, and Sergipe.[12] In turn, the Northeastern Coast
is a part of the Brazilian cultural region.

BB 178 565 596 The Family. One of the basic social institutions which has
strong historical roots in the Recôncavo, and in the other colonial
sugar cane regions, is the Brazilian family. The most conspicuous
survival of the colonial family is the present-day family stereotype
of the aristocratic stratum of Recôncavo society.

> The large, aristocratic, patriarchal family always has been the most important of Brazil's social institutions. Rarely has this primary kinship group had to play a role secondary to that of the church, as so frequently has been true in Spanish-American countries; nor has its relative importance ever been seriously challenged by the school, as may be the case in a North-American community. In colonial times such a large, closely knit group of relatives, acknowledging allegiance to the oldest living male, possessing many slaves, and carrying on the aristocratic tradition at its best, was the chief instrument employed in the occupation of Brazil. This

> 178 was in sharp contrast to the colonization of Spanish
> 565 America where the conquistador and the priest were
> 596 largely responsible for establishing the Spaniards as a ruling caste, and to the founding of the English colonies in North America where the community and the smaller, more equalitarian family were basic elements. As has been shown so well by Freyre's monumental work, the patriarchal form of social organization early obtained almost unlimited sway in Brasil. For centuries Portuguese America continued to be dominated by a few thousand casas grandes, seats of sugar engenhos and cattle fazendas, each of which was the fortress headquarters of a numerous clan. Even today there remains much of this feudal type of social organization, and this great family is the institution through which the white or near-white upper class maintains its control. Of course this patriarchal family has little in common with the equalitarian family of the United States and western Europe.[13]

565 The colonial family is the idealized family of both the aristo-
596 cratic upper class in Salvador and the sugar cane zone and of the local upper classes in the smaller cities. It also corresponds rather closely to the actual family structure of much of the upper class of the Recôncavo. The lower class families of the Recôncavo seem to have quite a different functional character and social significance.

565 The Upper Class Family. Marriage, contracted almost exclusively
582 from within the class group, has the important function of uniting the relatively small number of large extended families which compose the
594 upper class. The unit families, parents and children, of the Recôncavo
596 are relatively large, in conformation to the Brazilian stereotype of five children. This unit family is tightly enclosed in a net of relationships with the extended families of both husband and wife, and many social functions are centered within these larger groups.

565 The upper class child is reared within a well-defined circle
596 which includes the immediate family, the servants--who frequently have
861 a quasi-parental relationship to the children, like the legendary
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571 "mammy" of the United States South--and the more immediate members of the extended family.

565 596 861 [872] the extended family. The upper class child develops in an atmosphere of alternate indulgence and discipline, with very few responsibilities. Most upper class children attend private schools, which are usually parochial.

565 The social status of the upper class individual is determined by birth and is maintained by the economic and social standing of the individual and his family. The specific determinants of status--wealth, occupation, education, kin relations, and physical appearance[14]--are either fixed or are strongly influenced by the family.

565 596 In the Recôncavo the extended upper class family frequently has a diversified economic structure which enables it to safeguard effectively the position of the individual and the group. Ideally the family group includes the usinéiro (sugar mill owner or administrator), the fazendéiro (cane planter), the doctor, the lawyer-politician, and the urban business man. These various individuals cooperate to build and to maintain the economic, political, and social position of the family. These activities constitute the principal responsibility of the males of the family and justify, it is believed, the characteristic masculine superiority of the society.

565 588 [592] The Lower Class Family. Some of the upper class characteristics are shared by lower class families, especially by the upper stratum, but the contrasts are striking. Lower class families in the Recôncavo seem to have less stability and a less extended character than those of the upper class. Common law marriages and church marriages, not legally binding in Brazil, are quite common and are easily dissolved. The common law marriages of the young adults are frequently temporary, but most older adults seem to establish permanent unions.[15]

565 596 Though kinship relationships are always recognized and cherished, the extended family of the lower class is widely dispersed, and its economic role is usually minor.

000 565 571 economic role is usually minor. The individual or the unit family of the lower class is usually linked very closely, mainly in the economic sense, with an employer or merchant of influence (patrão). In a society in which personal relationships ("connections") count for so much, only a member of the upper class can be of real economic or political assistance.

565 857 Childhood in the lower class is quite different from that in the upper class family. From an early age the children must, out of economic necessity, accept many responsibilities. Young children frequently work in the fields or find odd jobs in the town. The girls may do the housework, cook, and manage the younger children while the mother works. The young sons, even six or seven years old, may pack a bundle of agricultural products across the município on the morning of market day. In the evening they return with the few articles of food or clothing which they have been able to purchase with the proceeds from their goods. As they grow older, the children either undertake more of the farm work or drift off to the nearby rural [464] areas and villages or to Salvador. The girls may find employment as servants or as agricultural or industrial workers. Ultimately [885] most will marry and settle down to a grinding life of poverty, childbearing, disease, and hard labor, which will, however, be relieved by an informal and highly convivial social life.

565 562 The position of the woman is still inferior to that of the man, but she has relatively greater economic, social, and sexual independence than the woman of the upper class.

565 776 The social life of lower class families is in marked contrast to the narrow, formal, and sexually-discriminatory social life of the aristocracy. Lower class life is filled not only with poverty but also with a tremendous series of religious and quasi-religious festivals

565 796 (festas) and informal social activities. The uninhibited enjoyment of [184] a samba (dance), a candomblé (fetish cult observance), a religious procession, or a Saint's day by the lower class is very different from the self-conscious upper class behavior under comparable conditions.[16]

565 562 369 The discussion above is largely in terms of stereotypes, and in fact there are many exceptions. In the upper class, strong-willed women may on occasion enter a profession--such as nursing or teaching--or operate a business or plantation, but usually with the aid and the advice of male relatives. In Salvador the upper class women are relatively more emancipated than are those of the villages and towns. 565 596 369 Many lower class people, especially the less poverty ridden groups of the villages and towns, tend to imitate the idealized upper class family pattern, within the limits of their economic, educational, and social resources.

565 571 621 59 In general it may be said that the interests of upper class families in the Recôncavo are regional, the interests of lower class families are local. The areally and biologically extended families of the upper class, interconnected through marriage and intermeshed in over-all economic, political, and social interests, are a basic element in the regional unity of the Recôncavo and in its integration into the Brazilian nation. In contrast the extra-local interests of lower class families are weak and unstable. The lower class community or neighborhood identification is the more effective unifying factor and seems to provide, in the Recôncavo, a focus for local interests generally lacking in at least the aristocratic and urban strata of the upper class.[17] However, the institutions of the community for the most part are maintained and directed by the aristocratic and the local upper class.

241 Economic Orientation of the Population. The Baianos of the
433 Recôncavo are predominately an agricultural people. This is true not
463 only of the actual cultivators and the associated economic classes of
[369] the countryside, villages, and towns, but also in a sense of the
[162] almost 350,000 urban peoples of Salvador. As a result of longstanding economic interdependence and continuous travel and migration back and forth, the associations of the people of Salvador with the soil are compelling and personal.[18] In their agricultural orientation the people of the Recôncavo are typical of the general Brazilian population. Even with the inclusion of Salvador, with its relatively
[162] large number of domestic and industrial workers, 47 per cent of the male workers of the Recôncavo were classified as agricultural laborers, whereas for the nation as a whole the comparable figure was 57 per cent, and for the United States, 31 per cent.[19] In the Recôncavo, if Salvador is disregarded, agricultural workers (with hunters and fishers) composed 65 per cent of the total male working population.

241 Agriculture is even more important than the above figures
433 indicate, for a large share of the remaining population of the Recôncavo
441 is occupied with processing and marketing agricultural products, supplying the agriculturalists with goods and with credit, or serving indirectly the needs of agriculture. Thus it is evident that life and livelihood in the Recôncavo is essentially dependent upon agriculture. The agricultural orientation of the Recôncavo is reflected in the economic roles of individuals and classes, but also in the preoccupation of the people with matters of soil, climate, crops, and land value. In Salvador the price and market for agricultural products are commonplace subjects of discussion, and throughout the region merchants and businessmen observe the weather and conditions of the crops with interest and, on many occasions, with anxiety.

128 Demography of the Recôncavo. The discussion of the composition and distribution of the population in the Recôncavo which follows is intended primarily as a basis for the study of agricultural phenomena. As such it is concerned with those population elements which are important in the production and distribution of agricultural products and in the servicing of the agricultural economy. The agricultural labor force is therefore the primary object of analysis, while the remaining population elements receive secondary consideration.

128 162 241 464 369 The population of the Recôncavo has been divided into two segments: (1) the rural population of the countryside and villages, which includes those engaged in direct agricultural production and those with a direct service or dependency relationship to agriculture; and (2) the urban population of the towns and cities, which has an indirect service or dependency relationship to agricultural production. (Table VI). The rural population has been subdivided in order to distinguish the agricultural labor force, consisting of those in direct agricultural production as workers or as administrators, from the service and dependent groups.[20] The accompanying table (Table VII) relates the area, total population, urban and rural population, and agricultural labor force of the 21 municipios of the Recôncavo.

241 464 [162] Agricultural Labor Force. Conceived in the narrowest sense, the basic human resource for agricultural production in the Recôncavo consists of the energy and skill of 196,000 agriculturalists--the agriculture labor force (Table VIII). In census terminology these are people ten years old or over who consider their principal occupation as that of employer, employee, or worker in crop cultivation (agricultura), animal husbandry (pecuária), or silviculture. In the Recôncavo these people are primarily cultivators and operators of farms

[TEXT CONTINUED ON PAGE 112]

TABLE VI

TOTAL, URBAN, AND RURAL POPULATION OF THE MUNICÍPIOS OF THE RECÔNCAVO IN 1950

Município	Total Population	Urban Population (Urban Centers with Manufacturing)	Rural Population (Total minus Urban Population)
Alagoinhas	52,007	21,283	30,724
Cachoeira	26,979	10,825	16,154
Catu	16,437		16,437
Conceição da Feira	10,532		10,532
Conceição do Almeida	25,407		25,407
Coração de Maria	20,256		20,256
Cruz das Almas	32,276	6,758	25,518
Feira do Santana	107,205	26,559	80,646
Irará	46,711		46,711
Itaparica	21,433		21,433
Maragogipe	36,868	9,744	27,124
Muritiba	31,605	7,452	24,153
Pojuca	6,911		6,911
Salvador	417,235	389,422	27,813
Santo Amaro	85,739	12,258	73,481
Santo Estêvão	31,665		31,665
São Félix	14,801	5,872	8,929
São Filipe	25,343		25,343
São Francisco	11,077		11,077
São Gonçalo	30,830	3,771	27,059
São Sebastião	21,135		21,135
Recôncavo	1,072,452	493,944	578,508

Source: Anuário Estatística do Brasil-1953, Ano. XIV.

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TABLE VII

RELATIVE POPULATION OF THE MUNICÍPIOS OF THE RECÔNCAVO IN 1950

Município	o/o of Area of Recôncavo	o/o of Total Population of Recôncavo	o/o of Urban Population of Recôncavo	o/o of Rural Population of Recôncavo	o/o of Agricultural Labor Force of Recôncavo
Alagoinhas	12	5	4	5	6
Cachoeira	3	3	2	3	2
Catu	3	2		3	3
Conceição da Feira	1	1		2	2
Conceição do Almeida	2	2	1	4	5
Coração de Maria	2	2		4	4
Cruz das Almas	2	3		4	5
Feira de Santana	17	10	5	14	15
Irará	11	4		8	10
Itaparica	2	2		4	1
Maragogipe	3	3	2	5	4
Muritiba	3	3	2	4	4
Pojuca	3	1		1	1
Salvador	6	39	79	5	6
Santo Amaro	9	8	2	13	10
Santo Estêvão	6	3		5	6
São Felix	1	1	1	2	2
São Filipe	3	2		4	5
São Francisco	2	1		2	1
São Gonçalo	4	3	1	5	4
São Sebastião	4	2		4	3

Calculated from Características Demográficas do Estado da Bahia, No. 8 and Anuário Estatística do Brasil-1953, Ano XIV.

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TABLE VIII

AGRICULTURAL LABOR FORCE OF THE MUNICÍPIOS OF THE RECÔNCAVO IN 1940 AND 1950

Município	1940 Agricultural Labor Force	Per cent of Change 1940-1950*	1950 Agricultural Labor Force—Estimated
Alagoinhas	8,922	25	11,152
Cachoeira	4,367	- 3	4,236
Catu	5,395	- 5	5,125
Conceição da Feira	3,132	7	3,351
Conceição do Almeida	10,066	- 7	9,361
Coração de Maria	8,205	3	8,451
Cruz das Almas	8,763	6	9,289
Feira de Santana	26,140	16	30,322
Irará	19,920	- 2	19,522
Itaparica	1,379	10	1,517
Maragogipe	7,513	2	7,663
Muritiba	8,959	15	10,303
Pojuca	2,575	-31	1,777
Salvador	7,697	57**	12,075**
Santo Amaro	25,566	-23	19,686
Santo Estêvão	9,315	20	11,178
São Félix	4,086	6	4,331
São Filipe	10,327	- 2	10,120
São Francisco	2,373	-22	1,851
São Gonçalo	8,872	- 4	8,517
São Sebastião	6,395	4	6,651
Recôncavo	189,967		196,468

*Calculated change in rural population from 1940 to 1950. It has been assumed that the agricultural labor changed at the same rate as the rural population.

**Because of a change in the method of totaling the non-urban population of Salvador, it was not possible to derive the 1940-1950 rural population change in the usual manner. The 1950 figure is the mean of three estimates of increase derived from total population change 1940-1950, rural quadrant change 1940-1950, and per cent of total population in agriculture 1940 projected to 1950. These estimates were, in order, 11,097, 12,517, and 12,700. The rural quadrant is a statistical subdivision of the município which does not necessarily include all the rural areas.

Source: Recenseamento Geral do Brasil: 1940. Censo Demográfico—Bahia, Vol. I, and Anuário Estatístico do Brasil-1953, Ano XIV.

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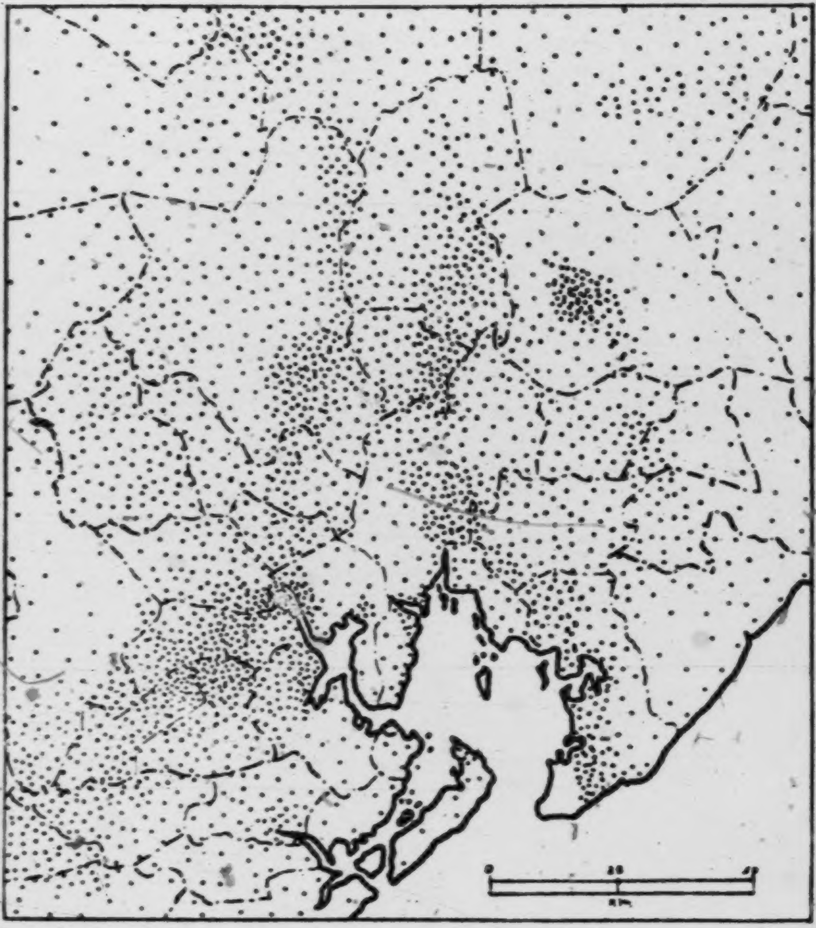

Each dot = 100 persons

RECONCAVO OF BAHIA

Agricultural Labor Force--1950

(Estimated)

Data estimated from Recenseamento Geral do Brasil: 1940. Censo Demográfico--Bahia, Vol. I, and (for 1950 data) Anuario Estatistico do Brasil-1953, Ano XIV.

MAP 17

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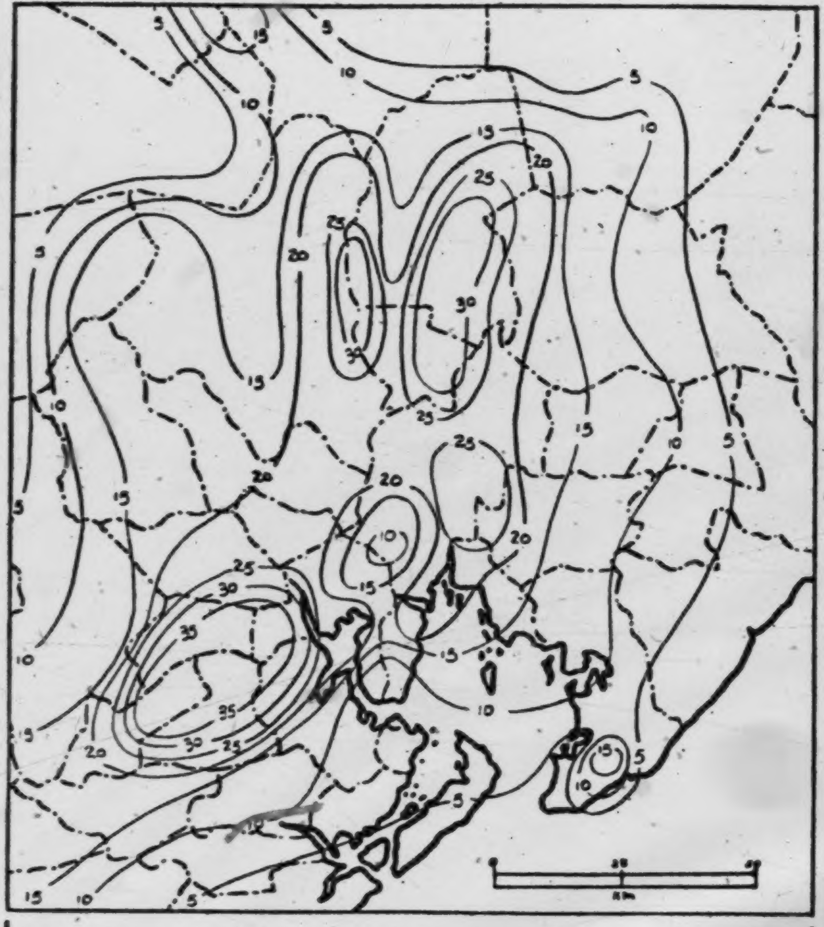
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RECÔNCAVO OF BAHIA

Agricultural Labor Force per Square Kilometer of Total Area--1950
(estimated)

MAP 18

241 464 and plantations, and to a lesser extent, ranchers and vaquéiros (cowboys).[21] Silviculture is not an important occupation in the Recôncavo.

161 162 241 464 634 The mean density of the agricultural labor force for the Recôncavo was 15.7 per square kilometer. Since the distribution is very irregular, this mean density is far from representative of local situations—only six municípios had densities within 10 per cent of the mean. [128] Because of the uneven distribution of cultivation, mean figures for individual municípios, especially the larger ones, are likely to be equally misleading. [127] In the discussion which follows the gross distributions derived from census data have been modified on the basis of field observation and of inferences drawn from related demographic, cartographic, and agricultural information.[22]

161 162 241 464 The density of agricultural workers in the Central Recôncavo (Map 18) is appreciably higher than in the surrounding areas, except in the southwest. This central zone has densities in excess of 20 per square kilometer, and within it are four areas with densities in excess of 25 per square kilometer. Along the border of the Recôncavo, densities usually fall to 10 per square kilometer. However, this is not true of the more densely occupied "bridge" zone which connects the area of heavy concentration in the Recôncavo, south of the Rio Paraguaçu, with the "coffee area" to the southwest beyond the Recôncavo. The map of densities (Map 18) and the dot map (Map 17) of the agricultural labor force suggest that this population segment is clustered in areas which generally have an eccentric location in relation to such centers as Salvador and the Baía de Todos os Santos.

Over 20 per cent of the agricultural workers of the Recôncavo live along the southern, western, and northern extremes of the region,

161 every section of which is more than 50 kilometers from Salvador, the
162
241 economic center of the Recôncavo, and also more than 50 kilometers from
464 the geometric center in Santo Amaro. If a line were drawn from the
161 *cidade* of Alagoinhas southwestward to the *cidade* of Nazaré, the
162 following *municípios* would fall entirely west of that line: Irará,
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464 Coração de Maria, Feira de Santana, São Gonçalo, Conceição da Feira,
634 and Santo Estêvão--all north of the Rio Paraguaçu--and Muritiba,
Cruz das Almas, São Félix, São Filipe, and Conceição do Almeida--all south of the Rio Paraguaçu. These 11 of the 21 *municípios* of the Recôncavo are all more than 50 kilometers from Salvador--all are much farther in terms of land transport. In these eleven *municípios* live 125,000 of the 196,000 agricultural workers. In part, this eccentricity with respect to Salvador is a result of the shape of the land surface, with the city located at the end of a peninsula. Only one of these 11 *municípios*, São Félix, lies on tide water, and that at the extreme upper limit of navigation. The others are so arranged that they cannot make optimum use of the central position of the Bay, with its relatively cheap and direct route into the capital.

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162 This eccentrically located belt is arcuate in form. It is the demographic representation of the transition zone from forest to
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464 scrub forest, which is often also the transition from the Coastal
[132] Plain to the Tabular or Crystalline Uplands. The concentration of
[133] agricultural labor in this belt is obviously significant from many points of view: social and political as well as economic.

Clustering is a characteristic pattern of Latin American population. The Recôncavo is the chief population cluster and the greatest single concentration of agricultural labor force within the state of

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464 Bahia. The broad cluster of the agricultural labor force is composed of several major zones of concentration and two minor agglomerations.

(1) The Southwestern Concentration: The most important of these concentrations, in terms of total number of agriculturalists, occupies the southwestern corner of the Recôncavo. This concentration is a major segment of the eccentric belt discussed above. It is located [131] in the Crystalline Uplands and the Intermediate Hills, along the drainage divide between the Rio Paraguaçu and the Rio Jaguaripe. This is an area of tobacco and manioc cultivation. There are some 35,000 agriculturalists in this concentration, which spreads over approximately 1,000 square kilometers in six municípios—São Félix, Muritiba, Cruz das Almas, Conceição do Almeida, São Filipe, and Maragogipe. The cidade of Cruz das Almas lies very near its center.

TABLE IX

AGRICULTURAL WORKERS—SOUTHWESTERN CONCENTRATION

[634]

Município	Distrito	Agricultural Workers 1950
São Felix	São Felix	2,568
	Outeiro Redondo	1,724
Muritiba	Muritiba	3,044
	Cabeças	1,699
Cruz das Almas	Cruz das Almas	6,038
	Sapé	1,845
	Baixa do Palmeira	1,476
Conceição do Almeida	Conceição do Almeida	3,878
	Comércio	2,038
São Filipe	São Filipe	4,931
	Cararipe	2,471
Maragogipe	Guapira	1,169
	Nagé	788
	Coqueiras	1,072
Approximately 1,000 square kilometers		34,741

With about 12 per cent of the Recôncavo's total area, the southwestern concentration includes 18 per cent of its agricultural labor force. In its core there are over forty agriculturalists per [634] square kilometer (the município of São Félix as a whole has 42.05 per square kilometer), and this compact core includes São Félix, northern

161 São Filipe, northern Conceição do Almeida, southeastern Cruz das Almas,
162
241 and the southeastern tenth of Muritiba.

464 The boundaries of this concentration are similar to the boundaries
[634] of labor concentrations in other parts of the western Recôncavo. To the
southeast the density of the cluster declines sharply across the
Intermediate Hills. There are very few fields and few farmers along
the estuary of the Paraguaçu, which lies beyond the hills. Much of
[311] this land is in forest. To the west the decline in density is even
more abrupt. In the dry *caatinga* beyond the western limits of Muritiba,
Cruz das Almas, and Conceição do Almeida there are only a few scattered
ranchers and small-scale farmers.

From the core of the concentration the distribution of agricultural workers continues to be relatively dense toward the north and toward the southwest, and this pattern extends across the "bridge" zone and into the coffee area beyond the Recôncavo. Just beyond the Recôncavo, in the middle of the "bridge," is the city and suburban zone of Santo Antônio de Jesus, which has a minor cluster of agricultural workers. The "bridge" follows the forest and scrub-forest transition.

161 (2) The Northern Concentration: Though the northern and
162 central clusters of the agricultural labor force of the Recôncavo
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464 are less well defined and individually less important than the
131 southwestern cluster, they are major concentrations. In the northern
Recôncavo a series of clusters extending through eastern Feira de Santana,
Irará, and Coração de Maria are grouped in a rough "u-shaped" pattern.
This concentration is the second major element of the eccentric belt
of dense agricultural labor. The verticals of the "u" follow
agricultural belts along the valleys of two tributaries of the (eastern)
Rio Pojuca. This is a zone of Tabular Upland and *caatinga* vegetation.

161 162 241 464 [131] Because it does not correspond to census divisions, it is difficult to determine the area and population of this "u" zone. Apparently it has about 1,150 square kilometers and about 30,000 agricultural workers (Table X). Maximum densities within this zone are 30 to 40 per square kilometer.

TABLE X

AGRICULTURAL WORKERS--NORTHERN CONCENTRATION

[634]

Município	Distrito	Agricultural Workers 1950
Feira de Santana	Feira de Santana	9,840
	Tiquaruçu	1,725
Coração de Maria	Coração de Maria	4,176
	Itacava	4,332
Irará	Irará	4,130
	Bento Simões	1,675
	Pedrão	2,454
	Ouriçangas	2,683
Approximately 1,150 square kilometers		31,015

The "u-shaped" zone is linked with the southwestern cluster by a belt of moderate population density. This belt, running north to south along the caatinga-forest transition, is followed by the Feira de Santana-Cachoeira railroad.

161 162 241 464 131 (3) The Central Concentration: The central concentration of agricultural labor, in east-central Santo Amaro, western São Sebastião, and São Francisco--the sugar cane zone, is not a part of the eccentric belt discussed above, but rather lies in the heart of the Recôncavo. There are about 6,000 agriculturalists in the 300 square kilometers of this area. The maximum density is about 25 per square kilometer. In distinction to the concentrations discussed above, the central cluster is in the lowlands--the humid Coastal Plain. (see Table XI).

TABLE XI

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AGRICULTURAL WORKERS--CENTRAL CONCENTRATION

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Município	Distrito	Agricultural Workers 1950
Santo Amaro	Rio Fundo	1,849
	Inhatí	1,542
	Mata de Aliança	920
São Sebastião	Jacuípe	1,036
São Francisco	São Francisco	804
	Santa Elisa	176
Approximately 300 square kilometers		6,327

(4) The Minor Agglomerations: Minor concentrations of agriculturalists surround two urban centers in the Recôncavo: Salvador and Alagoinhas. Most of the 12,000 agricultural workers in the município of Salvador are grouped either in the northeast--close to the central cluster of the sugar cane zone--or around the capital city. The latter either live in the city or in the sub-urban areas around and between the various urban segments. These sub-urban cultivators primarily work to supply the large urban market. Alagoinhas [245] lies in the midst of relatively unproductive taboleiros. The agriculturalists who serve its urban market and produce its chief commercial crop--oranges--are gathered compactly in a symmetrical ring around the city.

The concentrations discussed above account for some 80,000 [131] (41 per cent) of the agricultural workers and 3,150 square kilometers (25 per cent) of the area of the Recôncavo. In general, a straight line from the southwestern tip of Conceição do Almeida to the southern tip of Serrinha is the western limit of moderately dense distribution of the agricultural labor force. Beyond this line, in the caatinga of Feira de Santana and Castro Alves, there are few agricultural workers. However, in the caatinga of the município of Santo Estêvão and the adjacent part of Feira de Santana there is a zone with a population density of about 15 per square kilometer--higher than anywhere

161 162 else along the western border. This modest concentration, scarcely a
241 cluster, represents the sum of a number of small agricultural settle-
464 [361] ments scattered along the humid slopes of low *serras*. There are about
12,000 agricultural workers distributed over this area.

161 The distributional pattern of the rest of the Recôncavo can be
162 visualized as a coarse net in which the clusters are linked by areas
131 with population densities of 10 to 20 per square kilometer. There is
241 464 one large hole in this connecting net: along the common border of
Cachoeira, São Gonçalo, and Santo Amaro there is a zone with less than
ten and sometimes less than five agricultural workers per square
kilometer. This zone, very near to the center of the Recôncavo, for
[133] the most part is an area of rough sandy hills bordering the crystalline--
here the hills are particularly rugged and the transition zone broad.
On three sides--southwest, north, and northeast--this sparsely settled
zone is bordered by important clusters of agriculturalists.

161 The agricultural labor force of the Recôncavo is, as has been
162 seen, irregularly distributed. This distribution is highly fluid--
241 464 movement and growth and decline are continuously altering the pattern.
The whole region gained about 6,500 agriculturalists between 1940 and
1950, but these statistics do not reflect the extent of local reloca-
tion.

161 162 In the central Recôncavo one *município*, Santo Amaro, lost
241 almost 6,000 agricultural workers between 1940 and 1950, and in three
464 634 *municípios* of the central and eastern Recôncavo, Santo Amaro,
São Francisco, and Pojuca, losses exceeded 20 per cent. On the other
hand, in three *municípios* of the uplands of the northern and northwestern
Recôncavo--Alagoinhas, Feira de Santana, and Santo Estêvão--there were
gains of over 20 per cent. Over all, twelve *municípios* gained and nine
lost agriculturalists; the mean change in the agricultural labor

[TEXT CONTINUED ON PAGE 120]

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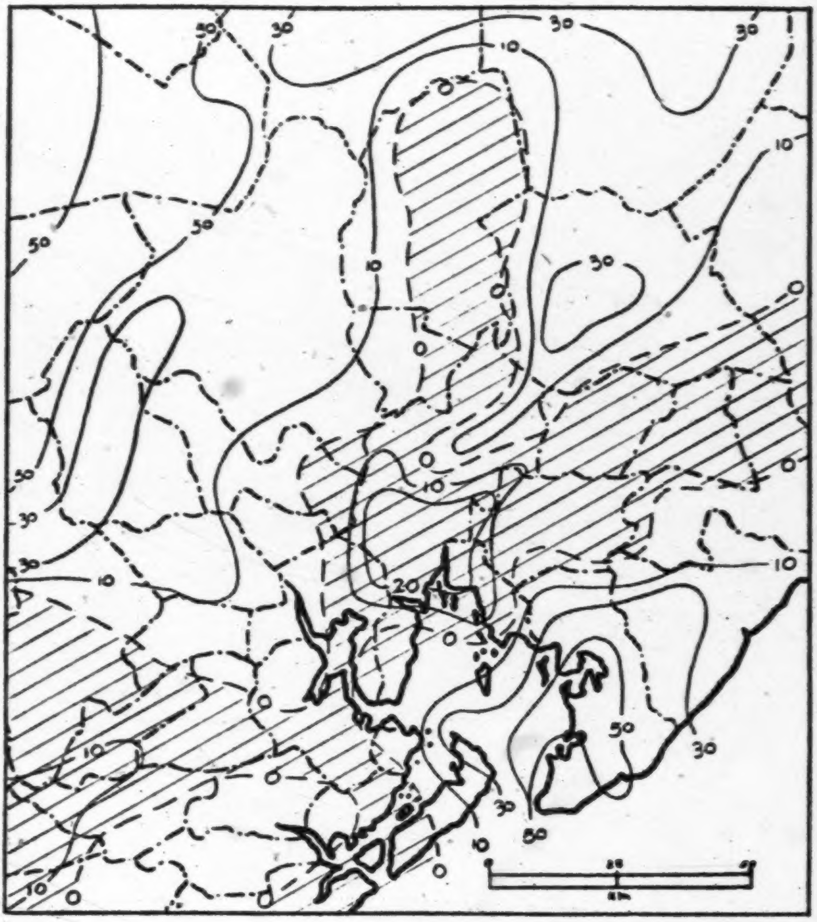
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RECÔNCAVO OF BAHIA

Per cent of Change in the Agricultural Labor Force (Estimated)
and in the Rural Population from 1940 to 1950

Shaded area shows zone of loss of agricultural labor force.

MAP 19

161 162 241 force of the 21 municípios--without regard to direction of change--was 13 per cent.

464 [634] In general the area around Salvador and the northeastern and western margins of the Recôncavo gained in agricultural labor force (Map 19). The Central Recôncavo and areas in the north-central, eastern, and southwestern Recôncavo lost agriculturalists between 1940 and 1950. Some of the factors which produced these changes were local; others were identified with the Northeast or with Brazil as a whole.

The growth of cities in the Recôncavo is a manifestation of a nationwide phenomenon. The expanding urban centers create an increasing market for agricultural products which, because of the difficulty of transportation and the lack of food processing facilities, must be supplied primarily from local sources. These expanding markets attract discontented or displaced agriculturalists, who settle as close to the urban center as possible. There is a marked increase in the concentration of agricultural labor around Salvador, Feira de Santana, and Alagoinhas.

731 166 [369] [241] In 1950 and 1951 the urban trend and its agricultural concomitant was re-enforced by a specific Northeastern phenomenon--the flight from the drought (sêca) of the interior. Most of the refugees (flagelados) from the dry sertão settled along the periphery of the Recôncavo. Here, where they could remain close to their cherished sertão, much land was open for squatters. As indicated above, others settled around the urban centers of the Recôncavo caatinga zone--Feira de Santana and Alagoinhas.

241 464 178 166 731 Observations suggest that the greatest relative increases in agricultural labor force from the sertão were in the municípios bordering the Recôncavo on the west and north, where the "normal"

BB 241 464 178 166 731

agricultural population is small. However, refugees from the drought also found their way into most parts of the Recôncavo. Even in 1953 they were to be encountered as squatters in Muritiba, as cane field workers in Santo Amaro, and as porters in Salvador.

Refugees from *sêcas* usually have not become permanent additions to the labor force of the Recôncavo. The *sertanejo* of the Northeast is renowned in Brazil for his attachment to his *terra* (native soil), no matter how cruelly it treats him. Especially those migrants who settle as squatters on the margins of the Recôncavo seem only to wait for the renewal of the rains to return to the *sertão*. In 1953 migrants were still entering the Recôncavo along the Feira de Santana-Salvador highway, but others were boarding the train in Salvador and returning to the *sertão*. They had come from the *sertão* on foot or by begging rides on trucks, found jobs in the Recôncavo, saved a few *cruzeiros*, and were returning to their native *terra*. Some refugees remain in the Recôncavo, of course, but the number is proportionately very small.

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Several sections of the Recôncavo, notably the sugar cane zone, are losing rural population and agricultural labor at a serious rate. The *municípios* of Santo Amaro and São Francisco lost 6,400 agriculturalists between 1940 and 1950. The reduction in the number of agriculturalists in the sugar area is at least partially a symptom of the growing rationalization of labor under the big *usinas*, which increasingly dominate the sugar industry. The emigration from these areas is selective--the majority of the emigrants are young adults who leave to seek employment and broader opportunity elsewhere.

B BB 241 166 [181] [565]

Emigration within the Recôncavo is one current of the great tide of agricultural unrest ascribed to all of Brazil.

> The rural Brazilian of the lower classes is notorious for his nomadic or migratory habits, for his lack of permanent attachment to the soil, for his tendency to

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> shift about from place to place. In few nations are such large proportions of the rural people, who in turn are three fourths of all people, so constantly on the move.[23]

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In the Recôncavo this shifting is like a game of musical chairs, in which the odd participant, probably thinking himself lucky, goes to Salvador. The exchange of places occurs on many levels: there is movement from plantation to plantation within the sugar zone, even between plantations operated by the same usina.[24] Many agricultural workers shift from one to another of the various agricultural zones within the Recôncavo.[25] These shifts of population in the Recôncavo primarily involve the agricultural laborers, share croppers, and tenant farmers. The landowners move only under the strongest pressure, and the upper class landowners are as immobile as the lower classes are migratory. However, these landowners compose only a small part of the agricultural labor force.

Another fluid element in the agricultural labor force of the Recôncavo is seasonal labor.

> Itinerant seasonal agricultural labor has for a long time been an important element in the sugar zones of the Northeast where at harvest time many of the cane cutters come from the "agreste", or even from the "sertao" into the "mata" zone.[26]

BB
[162]

The principal source of this seasonal labor for the Recôncavo is the small farmer class of the sertão of Bahia north of the Rio Paraguaçu and east of the Chapada Diamantina. These workers are males, exclusively; the number involved is not known, but it is probably on the order of 5,000. Some sertanejos return again and again to the same fazenda or usina; others change their place of employment from year to year. They all return to the sertão at the beginning of the wet season to plant gardens for their families and to harvest cotton and other crops.

241 The skills of the 196,000 workers are an important agricultural
[464] resource in the Recôncavo. This resource can best be evaluated in
terms of the prevailing agricultural systems: hoe and rudimentary plow
agriculture. Hoe agriculture is universal in the Recôncavo, and in a
society so thoroughly permeated with agricultural activity it is fair
to assume that, except for some completely urbanized laborers in
Salvador, all workers are familiar with the simple tools of this form
[249] of cultivation. Plow cultivation is more specialized; it is used
throughout the sugar cane zone but only in preparing the fields for
planting. The seedstalks are covered with a hoe, and knives are used
[407] for weeding and harvesting. Outside the sugar zone plows are rarely
encountered.

[231] The domesticated animals which play a prominent role in culti-
vation in the Recôncavo are oxen, horses, mules, and donkeys, and
the rudiments of their management are almost universally understood.
The prominent crops of the Recôncavo are ubiquitous--manioc, corn,
beans, sweet potatoes, peanuts, tobacco, sugar cane, bananas, and
oranges are grown in all areas, and their cultivation under the pre-
vailing agricultural system is common knowledge. There is little
present need for agricultural labor specialized beyond this level.

241 It is clear that the introduction into the Recôncavo of new,
178 radically different crops or techniques of cultivation would alter this
[181] relatively favorable situation. The agricultural worker of the Recôncavo,
like his counterpart in many other parts of the world, is inherently
conservative. As in the past, he will continue to resist even minor
changes, such as improved methods of seed selection in corn or im-
proved curing of tobacco. More radical changes would probably be
[212] resisted more strongly. The problem of "selling" new ways of pro-
ducing agricultural products is difficult not only because of the

241 178 212 satisfaction with traditional ways but also because the low level of literacy makes difficult even the presentation of new methods. The low level of literacy directly limits the media available for propagation of new ideas, and there is little consciousness of the existence of other methods in other areas. These factors restrict the intellectual horizon and reduce the tolerance for change.

241 407 [242] [354] As yet, mechanized agriculture is almost unknown--there are probably less than fifty tractors in the entire Recôncavo. Agricultural machinery is confined almost exclusively to government agricultural experiment stations and extension services or to the largest sugar *fazendas*--in 1952-53 the tractors of the *fazendas* were largely unused because of the lack of new parts or general unsuitability for the tasks at hand. A very small number of agricultural workers have had any experience with agricultural machinery. The introduction of large quantities of farm equipment would raise many problems related to skill [493] and receptivity. However, the truck, bus, and jeep are omnipresent in the Recôncavo, and the number of competent drivers and mechanics is surprisingly large. Most of these mechanically skilled workers live in the cities and towns, but some are available everywhere, especially in the sugar area. In this area, too, many workers have had experience with such massive equipment as the ox-plow. Thus the introduction of tractors and their accessories into the sugar zone, the area most adapted to mechanization at the present moment, would find at least a small cadre of experienced workers available.

241 461 In addition to skills, the mode of labor and the attitude toward work are important factors in evaluating the agricultural labor force. Agricultural work in the Recôncavo tends to be a joint enterprise--it is joint effort which makes it possible to perform many heavy or 000 arduous tasks with little mechanical assistance. On the cane plantations

On the cane plantations
241 the field work of planting and harvesting is done by labor gangs com-
462
857 posed of men, women, and older children. There is some specialization: men cut the cane, women gather and pile the cane stalks and leaves, and the older children assist at these tasks and at managing the ox carts. The smaller children remain at home, where they are responsible from a very early age for some household tasks.

241 Outside the sugar zone the family is a basic labor unit. Men,
592
462 women, and children work in the fields as required and participate in
857 processing tobacco and manioc. To an even greater extent than is characteristic of the sugar zone the children participate in family tasks, and as soon as they can manage the hoe, they join in the field work.

461 The upper class Baiano seldom does physical labor—to do physical
565 work is to lower one's status. In the lower class work would seem to be approached as a somewhat unpleasant necessity which is best tackled in a cheerful and convivial atmosphere. The agricultural laborer is given to spells of extremely hard work interrupted by banter and occasional "horseplay." While the lone worker often seems rather cheerless and plodding in the field, the shouted jokes, songs, and exclamations of groups of laborers frequently resound throughout the countryside. The intermittent vigorous labor seems to be an extension of play, for there is little social evaluation of hard work for its own sake.

Despite the enthusiasm and commotion which surrounds almost any effort, the per capita productivity of the worker in the Recôncavo
461 is relatively modest. In part this is a result of the intermittent
147 character of the work, but a more important factor is the limited energy of the worker. The lower class of the Recôncavo is weakened by perennial hunger, bad diet, and disease.[27]

241 464 As has been shown, the 196,000 agricultural workers in the Recôncavo in 1950 formed a relatively distinct cluster within Bahia. [131] These workers were concentrated especially in an arcuate belt near the western and northern frontiers, in the sub-urban zone of the larger cities, and in the central sugar zone. They were in complex motion, the net result of which was to reduce, in the decade 1940 to 1950, the agricultural labor force in the Central Recôncavo and to increase the labor force near the cities and along the western frontier. The labor force generally is adequately skilled for the agricultural tasks of the present system, but its tolerance for new ideas is [461] limited. The agricultural workers can work cheerfully and hard, but usually do so only with frequent interruptions, and the individual level of energy is low.

162 241 464 463 Rural Population. The agricultural labor force of the Recôncavo is a functionally but not residentially distinct segment of a larger population assemblage, the rural population. Rural population, as used here, includes not only the people of the countryside but also the village and town dwellers of all settlements without industrial establishments.[28] Although this assemblage can be defined in approximate residential terms as a rural population, it is considered here primarily as a functional grouping which includes agricultural workers and elements of all other major occupational groups except industrial workers. In this overwhelmingly agricultural society the associations of the non-agricultural occupational groups of the rural area with agriculture are of primary economic importance and compelling personal interest. While most of the agricultural workers are rural in the strictest sense, living in the countryside and on the fringes of the villages, towns, and cities, many others live within the small and

162 241 464 463 some in large urban centers. On the other hand, occupational groups sometimes considered to be urban--shopkeepers, for example--may have residences and places of business in the countryside. Thus it is not possible to differentiate occupational groups precisely on the basis of residence.[29]

162 241 464 In 1950 the rural population of the Recôncavo, as defined here, included 578,508 people. This assemblage represented about 54 per cent of the total population of the Recôncavo. Its distribution was broadly but not precisely comparable to that of the agricultural labor force, as will be seen.

162 241 464 463 The agricultural labor force, which has been discussed above, composes 34 per cent of the rural population. The remaining 66 per cent will be called the "service segment" of the rural population. This segment is composed primarily of the following elements: merchants, tradesmen, and speculators who buy agricultural products and supply the simple needs of the agriculturalists; indirect service groups such as financial agents, public administrators, and transport workers; and minors and dependent women.[30] All of these are directly or indirectly dependent upon the agricultural economy. This dependency is, of course, mutual: the farmer of the Recôncavo is, at least partially, a commercial agriculturalist who must market his products in order to purchase food and clothing. However, the agriculturalist is the primary producer; the service segment basically is auxiliary to the agricultural economy.

241 463 464 [162] The map (Map 20) of the service segment relative to the agricultural labor force reveals several significant contrasts. In the outer Recôncavo--from the southwest corner around the periphery to the northeast--the service segment is from 1.5 to 2.0 times the agricultural labor force. As will be seen, this is the zone of tobacco

[TEXT CONTINUED ON PAGE 129]

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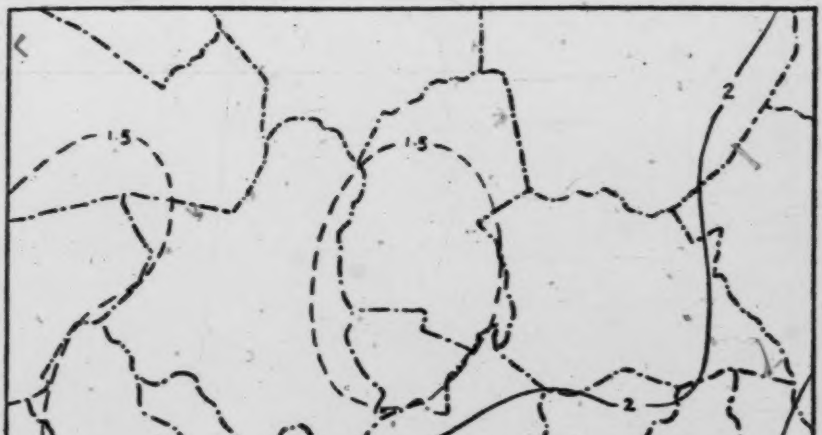
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RECÔNCAVO OF BAHIA

Ratio of the "Service Segment" of the Rural Population to the Agricultural Labor Force--1950

(estimated)

MAP 20

241 463 464 and manioc production. While there is some processing of agricultural products in this zone, the trade centers primarily are local, and there have been few historical reasons for urban development.

463 433 241 Around the Bay the relative size of the service segment increases to five, even to ten times the agricultural labor force. In this area there are some alternative productive pursuits, fishing and charcoal burning, for example. The definition given for the "service segment" is less appropriate in this zone: the fishermen, for example, render their service primarily to the major urban centers rather than to the agriculturalists. Moreover, there is a large parasitic group, especially in the sugar zone. The decline and rationalization of the sugar industry have left an unproductive class living in waning state but still supported by the agricultural economy. The sugar industry, which is more efficiently organized than other agricultural enterprises in the Recôncavo, probably is better able to support parasitic elements.

464 241 In addition to providing services, the service segment is the local labor reserve for agriculture. The extent of the reserve depends not only on the size of the service segment, but also on its composition. For example, in the western and northern areas of the Recôncavo, where two-fifths of the people are agricultural laborers, perhaps an additional one-fifth consists of small children and the aged and infirm. If those who perform essential services, basic to the economy, are deducted from the remaining two-fifths, few are left for a labor reserve. Fortunately the tobacco-manioc economy of the Recôncavo has little need for seasonal labor, and long-term labor needs, in theory at least, can be filled from the sertão.

464 In the sugar cane zone and on the Bay margins the general labor reserve is larger. However, this reserve is drawn upon by the labor

464 extravagant urban centers, the oil field and refineries north of the
Bay, and the fishing and shipping industries. Moreover, this area has
[565] a larger upper-class element, which as has been seen, could be counted
upon to perform manual labor only under dire circumstances.

464 Thus in all parts of the Recôncavo the local labor reserve
241 readily available for agricultural production and expansion is small.
In compensation the general high mobility of the lower class would
make available non-local reserves,[31] providing the proper incentives
were offered. The exploitative agricultural system of the Recôncavo
is ill-equipped to offer these incentives.

162 Urban Population. The remaining 493,944 people of the Recôncavo,
369
433 46 per cent of the total 1950 population, lived in the nine major
urban centers. These people have much the same relationship to agricultural production as the "service segment" discussed above, but the
relationship is less direct. These urban centers are engaged almost
exclusively in serving and in exploiting the agricultural population
of the Recôncavo and other agricultural areas of Bahia.

633 Salvador is the dominant city of the Recôncavo and of Bahia.
162 In 1950 it contained 389,422 people, 36 per cent of the total population of the Recôncavo and 8 per cent of the total population of Bahia,
or 79 per cent of all urban people of the Recôncavo and 41 per cent
of all urban people of the state. The next largest city in Bahia was
Feira de Santana--less than one-fourteenth the size of Salvador.

Although Salvador is the fourth city in Brazil, it is much
633 smaller than either Rio de Janeiro or São Paulo and somewhat smaller
than Recife.[32] It ranked just above Pôrto Alegre in total population.
Salvador, often called either Bahia or o capitál, cannot be interpreted
entirely or even predominately in terms of the Recôncavo. While its

[TEXT CONTINUED ON PAGE 132]

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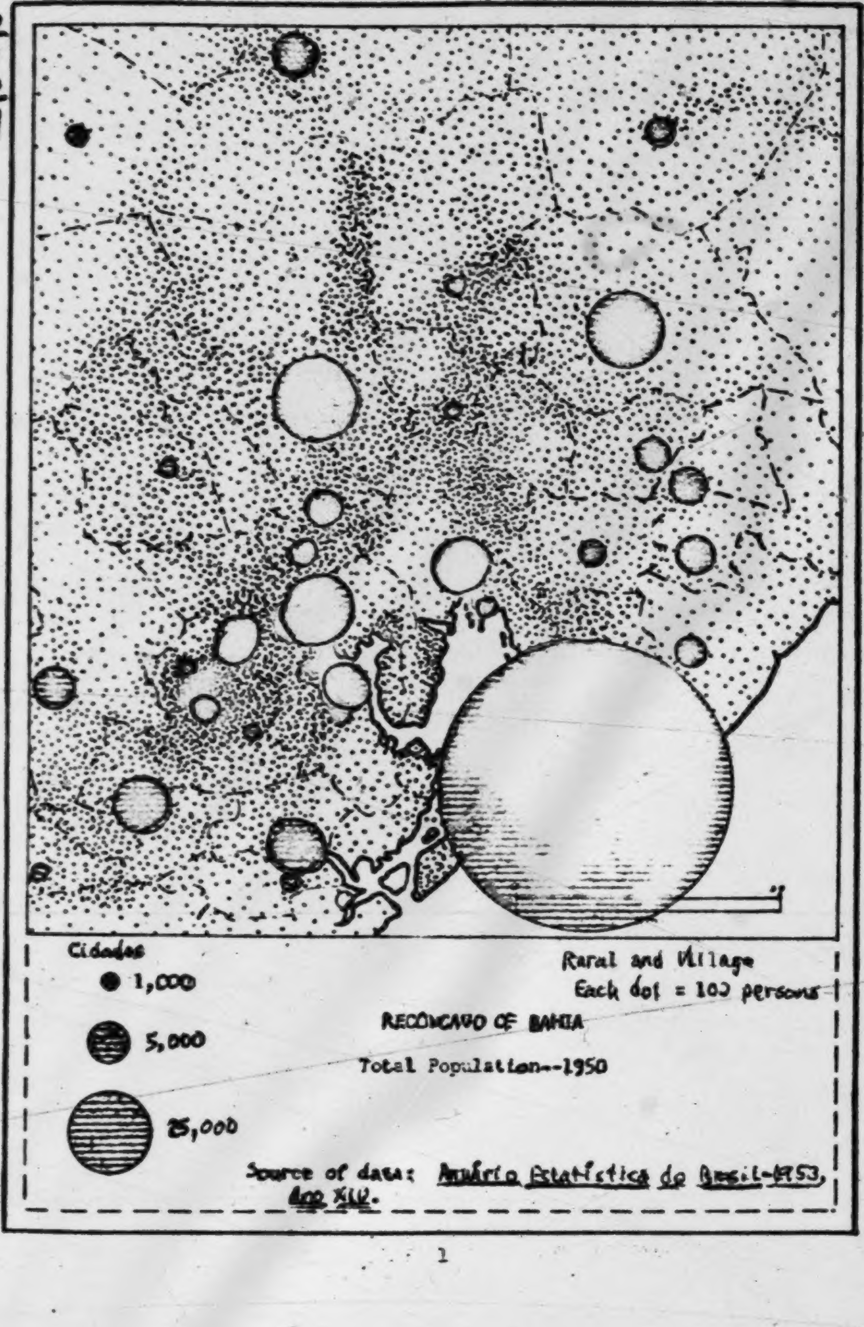
Cidades
● 1,000
5,000
25,000
Rural and Village
Each dot = 100 persons

RECONCAVO OF BAHIA

Total Population--1950

Source of data: Anuário Estatistica do Brasil-1953, Ano XIV.

633 tributary area does not extend beyond the state, it does include the
coffee and cacao areas, parts of the São Francisco basin, and the
sertão of Bahia. It is the focus of transportation and communication,
of finance and administration, and of foreign trade for the entire
state. Despite the economic, political, and social pre-eminence of
Salvador, a few cities operate quasi-independently in a particular
function, notably Ilhéus and Itabuna, in the cacao area.

The next largest cities in the Recôncavo--Feira de Santana and
Alagoinhas--are much alike in size, location, and function. Feira de
[162] Santana--often called merely Feira--with 26,559 people in 1950, was
the second largest city of the Recôncavo and of the state. It is the
[543] cite of one of the most famous cattle fairs in Brazil.[33] Alagoinhas
is smaller--21,289 people in 1950--and less notable historically. It
is the third largest city of the Recôncavo and the fifth largest of
the state. One of the common functions of both these cities is trans-
633 portation. Feira is the railhead of railroads from Salvador and from
494 Cachoeira and is the junction of the Transnordestina trunk highway
496 which crosses the northeast interior of Brazil, with a highway to
Salvador and with the only highway from Bahia to Rio de Janeiro.
Alagoinhas is the junction where the railraod (Leste) to Senhor do
Bonfim and Juàzeiro--on the Rio São Francisco--branches from the
main line from Salvador to Maceió, the capital of the state of Alagoas.
Just outside Alagoinhas are the main railroad shops of the Leste line
633 (Viação Férrea Federal Leste Brasileiro). The position of these cities,
369 intermediate between the Recôncavo and the sertão, is reflected in
291 the appearance of the people who are met on their streets--dark
142 Recôncavo agriculturalists in straw hats, patched khaki trousers,
633 and wooden clogs and mestiço vaquéiros (cowboys) from the sertão in
495 their leather hats and vests. Each has a number of postos (garages)
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633 to service the hundreds of trucks and busses which are transforming
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161 the transportation of the interior. Both cities reflected their
growing function by a great increase in population between 1940 and
1950.

633 Cachoeira-São Félix, 16,697 people in 1950,[34] and Santo Amaro,
[162] 12,258 people in 1950, are respectively the fourth and fifth largest
cities in the Recôncavo and the eighth and tenth largest cities in
[443] Bahia. Both of these cities are important agricultural and marketing
centers within the Recôncavo, and both are notable historical centers.
Santo Amaro was the great local social and economic focus of the
slave-holding _engenho_ sugar culture of the Central Recôncavo. Cachoeira
was the major local center of the Western Recôncavo and of the tobacco
economy throughout colonial times. While these cities maintain some
of their former importance, they are mainly cities of the past,
633 growing at a much slower rate than most urban centers. Both cities
496 lie at or near the head of navigation,[35] and both are on the rail-
494 road which runs from Salvador to the western interior. The construction of the railroad and the development of automotive transport
apparently have been important factors in the declining importance
of these cities, for it is no longer necessary to trans-ship goods
brought down from the interior into boats at these places. The
633 railroads and trucks move the goods directly to Salvador.[36] At present
[565] these cities function as local trade centers, as minor industrial
centers--Cachoeira-São Félix in tobacco; Santo Amaro in sugar--and
as the residences of decadent upper class families whose fortunes
declined with the disappearance of the slave-holding agricultural
systems.

The other urban centers of the Recôncavo:

The other urban centers of the Recôncavo:

633 [162] [443]

	1950 Population
Maragogipe	9,744
Muritiba	7,452
Cruz das Almas	6,758
São Gonçalo	3,771

[277] [504] [361] are all local trade and cigar manufacturing centers. Maragogipe is a port of minor importance.[37] The other urban centers have inland locations, near the inner edge of the Crystalline Uplands.[38]

Near the Recôncavo are four urban centers which have minor but appreciable effect upon its agricultural economy:

[162]

	1950 Population
Santo Antônio de Jesus	11,417
Nazaré	11,215
Castro Alves	6,479
Serrinha	4,602

Santo Antônio de Jesus and Nazaré are located along the southern periphery of the Recôncavo, and Castro Alves and Serrinha on the southwestern and northwestern periphery, respectively. All these centers [496] are on one of Bahia's two main railroads, both of which terminate at the Bay—at Salvador or at São Roque do Paraguaçu.[39]

633 464 433 [162] In 1950 the nine major urban centers of the Recôncavo had 100,000 to 120,000 workers in industry, transportation, and merchandising.[40] In all cities of the Recôncavo, except Salvador, the industrial workers almost exclusively were engaged in processing agricultural products--in sugar refining, cigar manufacturing, and [231] [241] slaughtering. Except for some of the animals slaughtered in Feira de Santana and the poorer grades of tobacco brought in from the sertão, these agricultural products originate in the Recôncavo.

The industrial structure of Salvador is more complex. It processes agricultural products from the Recôncavo, but also from other parts of the state, notably cacao. There is a small textile industry. It is probable that the majority of the industrial workers are employed in numerous small service industries which supply Salvador

BB 633 and, to a lesser extent, the rest of the Recôncavo and the state. The
464 relatively large and affluent upper class of Salvador utilizes an
433 extravagantly large number of domestics and of industrial workers--in
food, clothing, and construction industries.

BB Conclusion. The preservation of traditional values among the
178 181 people of the Recôncavo is evidence of the survival value of their
433 conservative culture, but the relatively slow growth of the population
161 is indicative of a declining economic role in the nation. Although
B BB the population of both Brazil and the Recôncavo grew between 1940 and
161 1950, Brazil's population increased 26.5 per cent, the Reconcavo's onl
162 16 per cent. In Brazil as a whole, urban populations increased 46 per
cent, in the Recôncavo only 34 per cent. The rural population of
Brazil increased by 17 per cent; the approximately comparable figure
for the Recôncavo was 4 per cent.

Within the Recôncavo the net effect of population changes in the decade 1940 to 1950 was the reduction in rural population from 60 per cent to 54 per cent of the total population (see Table XII).
BB Even more serious, from the agricultural point of view, was the
161 decline in the relative number of agricultural workers. Despite the
162 241 influx of agricultural people from the sertão, the percentage of the
464 total population in the agricultural labor force fell from 21 per cen
(1940) to 18 per cent (1950).

BB The greatest single concentration of population in the Recônca
633 is the city of Salvador. One-third of the people of the region live
[162] in this predominant city, occupying the tip of the peninsula which
separates the Baía de Todos os Santos from the sea. In this eccentri
peninsular location, Salvador is relatively distant from the main
centers of agricultural production and has only circuitous land

TABLE XII

COMPOSITION OF RECÔNCAVO POPULATION 1940-1950

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Year	Total Population	Urban Centers	Rural Population	Agricultural Labor Force
		Absolute		
1940	924,032	368,932	555,100	189,967
1950	1,072,452	493,944	578,508	196,468
Change	+ 148,420	+125,012	+ 23,408	+ 6,501
		Relative		
1940	100 o/o	40 o/o	60 o/o	21 o/o
1950	100 o/o	46 o/o	54 o/o	18 o/o
Change		+ 6 o/o	- 6 o/o	- 3 o/o
		Growth of Recôncavo Population		
1940 to 1950	16 o/o	34 o/o	4 o/o	3 o/o
		Per cent of Total Growth		
1940 to 1950	100 o/o	84 o/o	16 o/o	4 o/o

633 connections with the western section of the Recôncavo. On the other hand, its location combines oceanic access with the rest of Brazil, Europe, and the Americas and a direct approach, via the Bay, to all of the central municípios of the Recôncavo.

161 The major concentrations of rural, agricultural population in
162 the region are in the outer municípios of the Southwestern, Northwestern,
241 and Northern Recôncavo. In the southwest, there is a notable concentra-
464 tion on the Crystalline Uplands. In the northern part of the Recôncavo,
the concentrations lie along the dissected edges of the Tertiary
[134] taboleiros. Thus most of the agricultural people of the region live
[132] in upland areas of deep, porous soils and marginal rainfall. The
only major lowland concentration of agricultural people is in the
area of Cretaceous clay soils on the Coastal Plain of the Central
[249] Recôncavo. The relatively small size of the agricultural population
[178] in this area is reflective of the declining role of sugar cane culti-
vation in the Recôncavo.

241 464 "Falta de braços"--lack of labor--is a problem much discussed in
the Recôncavo. The landholders, merchants, and agronomists interviewed
in the region almost invariably complained of the shortage of agricul-
[161] tural workers or renters. At the same time, the level of per capita
productivity of most agricultural labor remains low, and, as will be
seen, there have been few attempts at improvement of agricultural
techniques. Neither is there any apparent trend toward higher wages
or higher returns on rented properties, which might attract more
people to the area. The complaints of labor shortages must be viewed
in the context of the systems of production and the economic organization
of agriculture, which will be discussed in the following chapters.

241 464 161 162 433 Several basic agricultural problems are prefigured in the analysis of the distribution of the population of the Recôncavo. The concentration of agricultural people in the western and northern municípios of the region corresponds, as will be shown, to a major area of agricultural production. Since this is also an area of marginal and irregular precipitation, it is almost inevitable that the level of production must be uneven and the lives of the agriculturalists unstable. The declining agricultural population of the Central Recôncavo is a symptom of the declining importance of the sugar economy, discussed previously, and of the centralization and rationalization currently under way. The alternating zones with high and low densities of population indicate the nuclear and separate character of the areas of agricultural production, detailed in the pattern of crop regions to be discussed in the chapters which follow.

000 Footnotes - Chapter IV.

B BB [127] [1] The basic sources of population data used in the following demographic analysis were:

Instituto Brasileiro de Geografia e Estatística, Recenseamento Geral do Brasil: 1940. Censo Demográfico, Regional Series, Part XII-Bahia, Vol. I (Rio de Janeiro: Serviço Gráfico do Instituto Brasileiro de Geografia e Estatística, 1950). Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II. Anuário Estatística do Brasil-1953. Características Demográficas do Estado da Bahia, No. 8.

B [131] [162] [2] This coastal belt includes 36 per cent of the area of Brazil and, in 1950, over 90 per cent of its population.

NB [633] [162] [3] After Salvador, the chief cities of the state of Bahia were:

Feira de Santana (in Recôncavo)	26,559 -	1950	population
Itabuna	25,351	"	"
Ilhéus	22,593	"	"
Alagoinhas (in Recôncavo)	21,283	"	"
Jequié	20,652	"	"

[4] Mineiros, inhabitants of Minas Gerais; Paulistas, inhabitants of São Paulo; Gauchos, inhabitants of Rio Grande do Sul; Pernambucanos, inhabitants of Pernambuco.

[5] See, for example, section by Charles Wagley in Charles Wagley (ed.), Race and Class in Rural Brazil (Paris: United Nations Educational, Scientific and Cultural Organization, 1952), pp. 10-11 and map op. p. 65.

[6] T. Lynn Smith, Brazil: People and Institutions (Baton Rouge: Louisiana State University Press, 1946), p. 186.

[7] Características Demográficas do Estado da Bahia, No. 8, p. 47.

[8] Ibid., p. 59. In the 1940 census the racial classes were: brancos (white), pretos (black), amarelos (yellow), and outros (other). In the Recôncavo the "others" were predominately mulatto.

[9] A dark skin is a social disadvantage and thus may, in certain circumstances, limit the economic opportunity of the Negro or mulatto. The composition of the upper class, with occasional dark-skinned individuals and many brancos da Bahia (persons with Caucasoid appearance but known Negro or mulatto ancestors) testifies to the racial fluidity of the Recôncavo compared with the American South. These individuals have access to such opportunities for education and cultural development as are available to the upper class in the Recôncavo.

[10] See section by Charles Wagley in Wagley, op. cit., pp. 148-149.

[11] See section by Harry W. Hutchinson in Wagley, op. cit., pp. 16-46.

[12] See section by Charles Wagley in Wagley, op. cit., pp. 10-11 and map op. p. 65.

[13] Smith, op. cit., pp. 633-634.

000

[14] See section by Charles Wagley in Wagley, op. cit., pp. 148-149.

B BB NB [585] [586] [671]

[15] Smith, op. cit., pp. 637-640, citing Anuário Estatístico do Brasil-1939/40, states that there were 687 church marriages for each civil marriage in Bahia. The number of common law marriages is, obviously, not precisely known. Brazilian statutes do not permit divorce from civil marriage.

BB [182] [541] [883]

[16] The chief exception to this social pattern is during Carnavál, when people of all classes "let themselves go." However, it is mainly the adolescents of the upper class who, for the moment, escape from the rigid social code of their class.

[17] As a consequence of the high mobility of the lower class, many of these community or neighborhood identifications are transitory. However, because of the free social intercourse within the class, the local relationships are quickly established and easily maintained. The core of local identification and of the community or neighborhood seems to be maintained primarily by the more stable upper-stratum of the class.

[18] The industries, trading houses, and exporters of Salvador are concerned to a large degree with agricultural products.

[19] For the United States, see Smith, op. cit., p. 221. For Brazil, calculated from the 1940 census.

BB [127]

[20] A special statement is required because the problems of deriving data for population in this region profoundly affect the reliability of the demographic analysis. At the time this analysis was made, only incomplete and preliminary population data from the 1950 census had been published. Total population data by political units—municípios and distritos—and by "urban" places were available. It was necessary to estimate the agricultural occupational data. The 1950 agricultural labor force was projected from the 1940 data on the basis of changes in the rural population. Because the agricultural labor force and the rural population of which it is a part are subject to approximately the same social and economic forces, it was assumed that the change in the latter could be used to project the 1950 size of the former. The tables showing the derivation of the agricultural labor force for 1950 are based upon this procedure.

BB [162] [463]

[21] In 1940 the composition of this occupational group—based upon a combination of population census and agricultural census data—for the state of Bahia was approximately as follows:

Independent operators	44 per cent
Members of family	27 per cent
Employees	24 per cent
Employers	2 per cent
Non-owner administrators	2.5 per cent

Thus less than 5 per cent of the agricultural labor force were administrators; the others were either cultivators, vaquéiros, or agricultural laborers. In the Recôncavo the administrative group probably was relatively smaller.

BB [128]

[22] In a region of such large statistical areas and diverse physical resources, it is almost inevitable that mean figures for some municípios, such as Feira de Santana, Alagoinhas, Irará, or, most of all, Santo Amaro,

000 BB [128] should be misleading. District data are desirable, but occupational breakdowns for these smaller political units are available neither for 1940 nor 1950. Furthermore, the areas of these districts cannot be calculated with even minimal accuracy from existing sources. Thus the distribution of rural population and agricultural labor force within municípios is largely a matter of inference. For example, the 1950 agricultural labor force was estimated, as has been seen, from the 1940 data and changes in rural population. Densities for each município were calculated from these estimates, and these densities were used as guides, in conjunction with the total populations of the various districts, in determining the distributional patterns of the map of the density of the agricultural labor force and the dot map of agricultural labor force. These maps are thus inferential distributions of inferred data.

[23] Smith, op. cit., p. 297.

BB [435] [24] Labor turnover is one of the explanations proffered for the high cost of sugar production in Bahia.

[25] The explanations offered by these migrants are various: lack of opportunity, a hostile or unfriendly landlord or creditor, a quarrel within the family or neighborhood, crop failure, or a desire to be near relatives.

[26] Joint Brazil-United States Economic Development Commission, The Development of Brazil (Institute of Inter-American Affairs, Foreign Operations Division. Washington, D.C.: U.S. Government Printing Office, 1953), p. 16.

BB [796] [27] However, these people muster tremendous energy for festas (holidays or feast days), especially Carnavál. At such a time, a middle-aged lady with a chronic heart condition was observed to dance, in a procession, for several miles down the road. During the novena of Nossa Senhora de Purifição in Santo Amaro, the troups of performers will journey many miles to attend the celebration, dance and sing throughout the nights of each of the nine days, and without rest return to their homes.

BB [633] [28] The people of nine urban centers of the Recôncavo--Salvador, Feira de Santana, Alagoinhas, Cachoeira-São Félix, Santo Amaro, Maragogipe, Muritiba, Cruz das Almas, and São Gonçalo--are thus excluded from the rural population. These are the nine ranking cities of the Recôncavo, and all except São Gonçalo have more than 5,000 people. In addition to industry, those transportation, financial, retail, trade, and administrative functions which are not strictly local are confined to these urban centers, as well as wholesale trade and international commerce.

B [631] [633] [29] It is significant that Brazil has no urban political unit per se--the município or the distrito has both urban (city, town, or village) and rural sections without administrative expression.

B BB [565] [562] [857] [30] In this society there are many women, especially in the lower class, who can scarcely be considered as dependent. Moreover, as has been seen, children are also frequently productive members of lower class families. In the upper class of the villages and towns, however, there are many children and housewives whose activities are either purely domestic or are only indirectly productive.

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[31] However, almost all areas of Brazil have perennial labor shortages.

B [633] [162]

[32] In 1950, the urban centers in Brazil with more than 250,000 population were:

Rio de Janeiro	2,303,063
São Paulo	2,017,025
Recife	512,370
Salvador	389,422
Porto Alegre	375,049
Belo Horizonte	338,585

[33] Others are Campina Grande in Paraíba, Sorocaba in São Paulo, and Tres Corações and Campo Belo in Minas Gerais.

BB [133] [491]

[34] Cachoeira and São Félix are twin urban developments opposite each other on the Rio Paraguaçu. The river here is narrow, and the two centers are linked effectively by a combined railroad-highway bridge. In 1950 the population of Cachoeira was 10,825; the population of São Félix, 5,872. The two cidades are, in the main, a single functional unit

BB [505] [493]

[35] Santo Amaro proper can be reached by sailing craft or canoes only, but small steamers of the type used in the Bay regularly ascend th Rio Sergi to the outskirts—the connection into the city proper is by a streetcar drawn by two recalcitrant mules.

[36] There is little direct evidence for this conclusion, but it is a reasonable inference from the present flow of goods and the observable decline in wealth and prestige in these cities. Nowadays the steamers which serve these ports carry passengers almost exclusively, and the number of sailing craft (saveiros) loading is generally small. It shoul be noted that trucks play a much more important role in the movement of goods than the railroads, except in the sugar zone, and that busses rival railroads as passenger carriers. The main highway system of Bahi has by-passed both Santo Amaro and Cachoeira.

BB [491]

[37] An all-weather road is now being constructed from Conceição do Almeida to Maragogipe. This will enable passengers and goods moving toward Salvador via the Bay to by-pass Cachoeira-São Félix. This may well further reduce the importance of the latter and increase the growing prosperity of Maragogipe.

BB [491]

[38] Muritiba is only 5 kilometers from São Félix, but the two citi are quite distinct. São Félix-Cachoeira occupies the lower slopes of the narrow valley of the Rio Paraguaçu. A belt, composed of the upper slopes and the edge of the Uplands, which is all either cultivated or i second growth, makes a distinct but narrow, 3 kilometers wide, break between Muritiba and São Félix.

[39] Nazaré is the main shop and Santo Antônio an important statio of the Estrada de Ferro Nazaré. The terminus of the "Nazaré" is São Roque do Paraguaçu—down river from Maragogipe. Castro Alves is on the Brumado, Caculé, and Rio de Janeiro branch of the "Léste," and Serrinha on the Alagoinhas, Bonfim, Juàzeiro branch of the same line.

[40] Estimated from 1940 occupational data.

CHAPTER V

CROPS AND CROPLAND DISTRIBUTION

BB 241 133 *Introduction*. The Recôncavo is an enclave of cultivated land
facing on the sea and more than half surrounded by the *Sertão* of North-
eastern Brazil. It is one of a number of detached areas of dense settle-
BB 361 241 133 ment and intensive crop cultivation scattered along the northeastern
coast—Pernambuco, Sergipe, Alagoas, and the states of the northern
coast of the "bulge" of Brazil have similar coastal nuclei. Indeed,
B 361 241 133 this littoral mode of settlement is characteristic of Brazil, although
in the center and the south of the country the concentrations of settle-
ment and cultivation are usually separated from the ocean by a belt of
rough hills or mountains. A glance at a population map clearly reveals
that Brazil is a coastal nation as far as the distribution of its
people is concerned; indirectly such a map demonstrates the coastal
distribution of crop cultivation. In this, Brazil somewhat resembles
the United States at the opening of the nineteenth century when it,
too, was altogether a nation of the Atlantic seaboard. The specific
BB 361 241 433 178 nuclear character of the Recôncavo dates from the beginning of its
settlement—it was from the first a region of crop cultivation, and the
settlement of the *sertão* of Bahia derived from the people and needs of
the Recôncavo. During the four centuries since the Portuguese first
came, the crops, animals, and systems of production of the Recôncavo
have retained much of their original character.

BB 128 241 The present chapter deals with the principal activity of the
Recôncavo, the production of crops. As a preliminary to the discussion
of the individual crops and their distributions, it is appropriate to

128 241 sketch the modes of cropland distribution which are characteristic of the region. This introductory discussion will be extended in the conclusion of the chapter, when it will be possible to discuss the general patterns of cropland distribution and the changes in the intensity of land use in terms of the specific component crops. The details of the practices of cultivation will be discussed in Chapter VI.

241 311 [171] The mean intensity of crop cultivation within the Recôncavo is high only in terms of the surrounding sertão. Indeed, there are very few areas of Brazil of any great size in which the intensity of land use is comparable to that of such areas as Northwestern Europe, Japan, India or even the Midwest of the United States. The landscape of the Recôncav is composed of a series of small, intensively utilized areas separated and surrounded by zones in which the cultivation of crops is scattered. As a result, the mean intensity of cultivation is low—for the Recôncav generally, mean figures for agricultural phenomena tend to mask great differences between specific areas. As will be seen, the chief concentrations of crop cultivation are in the Central Recôncavo and on the seaward edge of the Uplands. The principal zones of scattered cultivation are in the Intermediate Hills, in the littoral forest behin the beach line, and on the interior margins of the Uplands where the Recôncavo gradually gives way to the sertão.

241 Even within the areas of relatively intensive cultivation, there are many interruptions. These gaps are not very conspicuous within the restricted confines of the sugar-cane growing Central Recôncavo, but elsewhere the continuity of the fields is broken by patches of seco growth and by the slopelands and wet valley bottoms. Most of the cultivated areas of the Recôncavo seem to reflect the grudging acquiescenc of nature to the efforts of man and not the triumph of the cultivator

241 over the forest or the *caatinga*. In most areas it is the second growth,
not the cultivated fields, which dominates the landscape.

241 The scale of the maps accompanying the following sections does
361
443 not allow the indication of one of the significant patterns of cropland
634 distribution in the Recôncavo—the concentration of cultivation around
the *cidades*, the political centers. Each *cidade* is the economic focus
of its *município* and is usually the primary market for the products of
489 its cultivators. The poorly developed system of transportation in the
rural areas puts a premium on proximity to the market center. Thus in
most of the *municípios* there is a decrease in cultivation away from the
cidade, and where the *municípios* are large, such as on the northern and
western perimeter of the Recôncavo, cropland becomes very widely scattere
241 before the political boundary is reached. This centralized distribution
361 of cropland has been complicated by the development of roads and truck
443
491 traffic. Cultivators tend to cluster along the main highways with
little regard for the absolute distance to the market of the *cidade*;
accessibility as represented by time rather than distance seems to be
the more important factor in choosing land for cultivation, providing
that land is available. The pattern of concentration of cultivation
along the highway is especially characteristic of the Upland sections
of the Recôncavo.[1]

241 There are many exceptions to the modes of cropland distribution
178 mentioned above. In the Recôncavo tradition and prestige often contravene direct economic self-interest. On a large scale the persistence
of sugar cultivation is an example of the unwillingness to explore new
sources of income. In other areas the traditional social advantages
of land ownership may impede the subdivision of large properties into
farms or rented plots, even where hired labor is not available to
000 cultivate the land efficiently. Livestock production, which offers

231 241 [311] [554] Livestock production, which offers social prestige as well as economic gain, may occupy land within the cultivated area which more profitably could be devoted to crops. These factors, together with the eccentricities of political boundaries and the vagaries of terrain features, help to produce many distinctive local variations of the general geographical pattern of cultivation and of specific crops.

241 As will be seen in the following discussion, both land rotation (field and fallow) and permanent systems of cultivation are practiced in the Recôncavo. Under the land rotation system, the field is planted for a single year or for several years and is then abandoned to wild vegetation for a fallow period which, in some areas of the Recôncavo, has been reduced to as little as five years. Under the system of permanent cultivation, cropping is either continuous or is interrupted only by brief, widely-spaced fallow periods--in the sugar cane area, four years of cultivation are followed by one year of fallow. The significance of the data on the per cent of the area in cropland depends in part upon the system of cultivation employed.

127 241 231 Sources of Data. The statistical data used in the analysis of crops and animals in the following sections were drawn almost exclusively from two sources. Produção Agrícola: 1948[2] was the only source available with relatively complete data, gathered on a consistent basis, for the area, production, and value of the principal crops of Brazil by município units. This basic source has been supplemented by data for livestock taken from "Pobulação Pecuária em 31/12/1948."[3] In general these two sources provide a reasonably accurate and detailed statistical basis for the analysis of crops and livestock.

127 241 However, a careful inspection of the crop data, and especially the calculation of crop yields by combining area and production data, revealed obvious errors in the figures in a number of instances. Usually

127 the errors concerned crops of trivial importance, but occasionally the
241 use of such erroneous data would have produced serious misinterpretations.
Where this has been the case, it was necessary to estimate a more approp-
127 riate figure. Such estimates were developed by inferences from related
128 statistical data supported by observations in the field. The procedures
241 which were employed are illustrated in full in Appendix D through a
detailed analysis of the data (for manioc) which were most thoroughly
modified in this fashion. Wherever modified, rather than official data
have been used in the text, the official data and the basis of modifi-
cation have been indicated in a footnote or in the appendix.

241 Crops and Animals of the Recôncavo. A very large number of crops
433 are known to the agriculturalists of the Recôncavo, but the number of
important crops is small. It is convenient to divide these into three
groups--basic subsistence crops, basic commercial crops, and supplementary
(minor subsistence and commercial) crops. As will be seen, many subsis-
tence crops have their commercial importance, but the present concern
241 is only with a broad grouping. The crops of the Recôncavo are listed
433 below, together with their local names and the area of their cultivation
192 in 1948:

Basic Subsistence Crops:		
Manioc or Cassava (Mandioca)	22,472	hectares
Corn (Milho)	9,679	"
Beans (Feijão)	7,034	"
Bananas (Banana)	1,069	"
Peanuts (Amendoim)	550	"
Sweet Potatoes (Batata doce)	344	"
Basic Commercial Crops:		
Tobacco (Fumo)	21,886	"
Sugar Cane (Cana de Açucar)	11,695	"
Coffee (Café)	2,941	"
Orange (Laranja)	1,116	"
Coconut (Côco)	876	"

241 Supplementary Crops
433 (Subsistence and Commercial):
192

Pineapple (Abacaxi)	168 hectares
Rice (Arroz)	61 "
Tomatoes (Tomate)	46 "
White Potatoes (Batata inglêsa)	44 "
Cotton (Algodão)	40 "
Onions (Cebola)	14 "
Garlic (Alho)	5 "
Green or Snap Beans (Fava)	4 "

241 On the basis of the above figures, the total cultivated land in the
311 Recôncavo in 1948 was about 80,000 hectares. In addition to the above,
245 there are a number of tree crops, not cultivated in the true sense, which
are important in the agricultural complex. More often than not these
"crops" are of spontaneous origin.

[192]

African Oil Palm (Dendê)
Mango (Manga)
Jack Fruit (Jaca)
Cashew (Cajú)
Bread Fruit (Fruta de pão)

231 The following animals are important in the livestock economy of the Recôncavo:

[192]

Cattle (Bovinos)
  Cows (Vacas)
  Oxen (Bois de trabalho)
Sheep (Ovinos)
Goats (Caprinos)
Swine (Suinos)
Donkeys (Asininos or Burros)
Mules (Muares)
Horses (Eqüinos or Cavalos)

These animals will be discussed in the chapter on animal industry (Chapter VII).

244 Manioc. Manioc was one of the most important cultivated plants
which the Portuguese colonists borrowed from the Indians of Brasil.
[175] Flour made from the manioc root, farinha de mandioca, was the basic
[262] subsistence food of the colonial sugar economy and remains today the
[178]
[565] principal element of the diet of much of the Brazilian lower class.
006 Manioc production is most notable along the coast of Brazil, from the

B
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433 Manioc production is most notable along the coast of Brazil, from the mouth of the Amazon to Rio Grande do Sul, but it has considerable importance in the interior of the eastern half of the country.[4] The tonnage of manioc production in Brazil is exceeded only by that of sugar cane--thus manioc is produced in greater quantity than corn, beans, or rice, the other basic subsistence crops. However, the total value of manioc production is less than that of coffee, cotton, [illegible], corn, or rice. In the Recôncavo the cultivated area of manioc, over

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262 22,000 hectares, exceeds that of any other crop, and the value of its production is second only to tobacco. It is usually grown as a subsistence crop for local consumption, but there are a few areas of surplus production.

NB
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262 Mandioca--manioc, cassava, or yuca--is a stem-propagated perennial which is tolerant of a variety of edaphic, climatic, and cultural conditions. The rootstock of the bitter variety--Manihot utilissima, or m. esculenta--which is most common in Bahia, contains a poisonous substance--manihotoxine--which must be removed before it can be used as human food. In the Northeast the roots almost universally are converted in crude mills into farinha de mandioca, a coarse flour which is eaten in either a raw or cooked state.[5] Sweet manioc (manihot api, in Brazil called aipim) is cultivated on a small scale. The rootstock of this variety may be eaten without extensive processing and is prepared, like the white potato, by boiling.

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433 The cultivation of manioc is a widespread feature of the cultural landscape of east-central Bahia, overshadowed only by the low and scrubby second growth, capoêira, which follows the intensive cultivation of this plant under a system of land rotation. Manioc cultivation and the processing of its roots are the most characteristic pursuits of the rural people--and often the most primitive.

> NB 244 252 Manioc is generally cultivated by hand by small cultivators on land near the huts in which they live--[land] called the mandiocal, very common in the interior of the state. The immediate preoccupation of the sertanejo [countryman of the interior] after the construction of his house is the planting of manioc to secure cheap food--either sweet manioc or bitter manioc, which is transformed into flour. All the family are employed in this work. The industry of flour production is rudimentary and it uses simple processes.
>
> BB NB 244 43 161 The cultivation of manioc in Bahia is to provide flour for the local market, since the state does not export this product. The development of this culture is, therefore, closely related to the distribution of population, the most productive zones which are noted on the map corresponding to regions where the population is most dense. It is perfectly reasonable that the most productive region corresponds to the Recôncavo, where there is concentrated the mass of the population of Bahia and a large number of towns and cities, the most important and populous in the state. . . . . . it is the region of the most highly developed agriculture in the state; it united a relatively dense rural population with manioc, almost always cultivated on a large scale in the zones of the cultivation of tobacco.[6]

BB 244 311 433 As is indicated in the foregoing quotation, the distributional pattern of manioc reveals a very close association with the cultivation of tobacco and with certain urban centers. But as might be expected in view of the broad environmental tolerance of manioc, its distribution within the Recôncavo is not directly determined by any particular physical factor. Manioc is grown in all parts of the Recôncavo, excepting only the compact pockets of sugar cane cultivation. Only one município, São Sebastião, grew less than 100 hectares or produced less than 1,000 tons of tubers in 1948. In eight municípios the area of manioc cultivation exceeded 1,000 hectares, and the production was more than 10,000 tons in each. About 28 per cent of the cropland of the Recôncavo was in mandioca.[7]

The major concentration of manioc cultivation (Maps 22 and 23) and production (Maps 24 and 25) is along the eastern edge of the Crystalline Uplands in the Southwestern Recôncavo, where in 1948 three municípios[8] grew 54 per cent of the Recôncavo's 22,472 hectares of

[TEXT CONTINUED ON PAGE 154]

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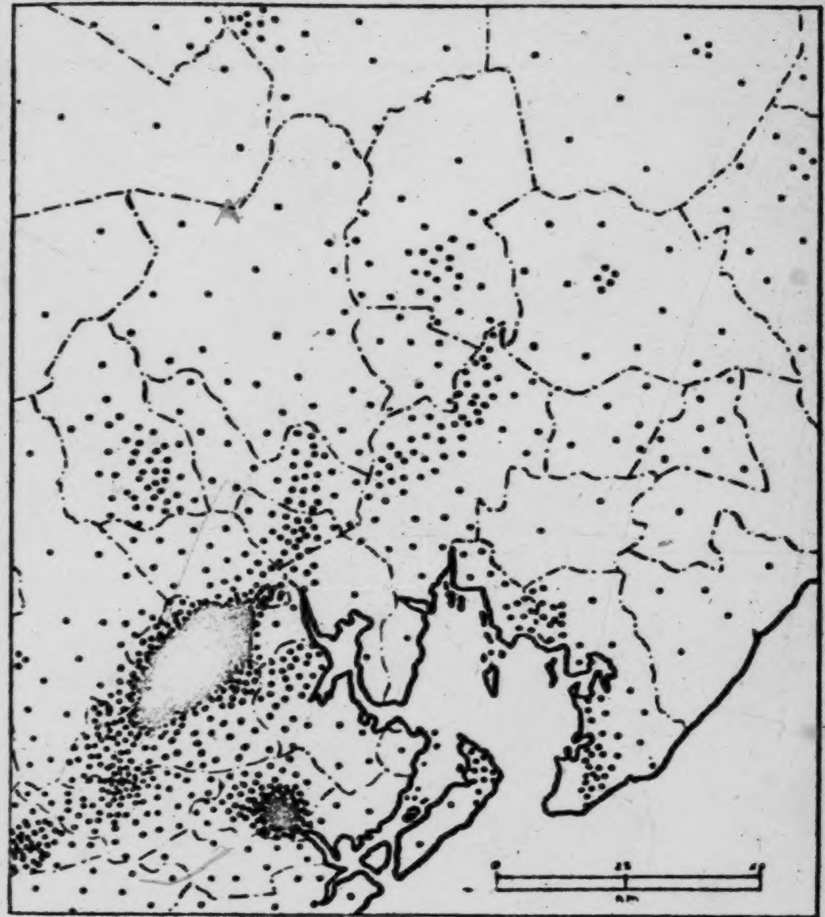

Each dot = 25 hectares

RECONCAVO OF BAHIA

Area in Manioc—1948

Source data modified from Produção Agrícola: 1948.

MAP 22

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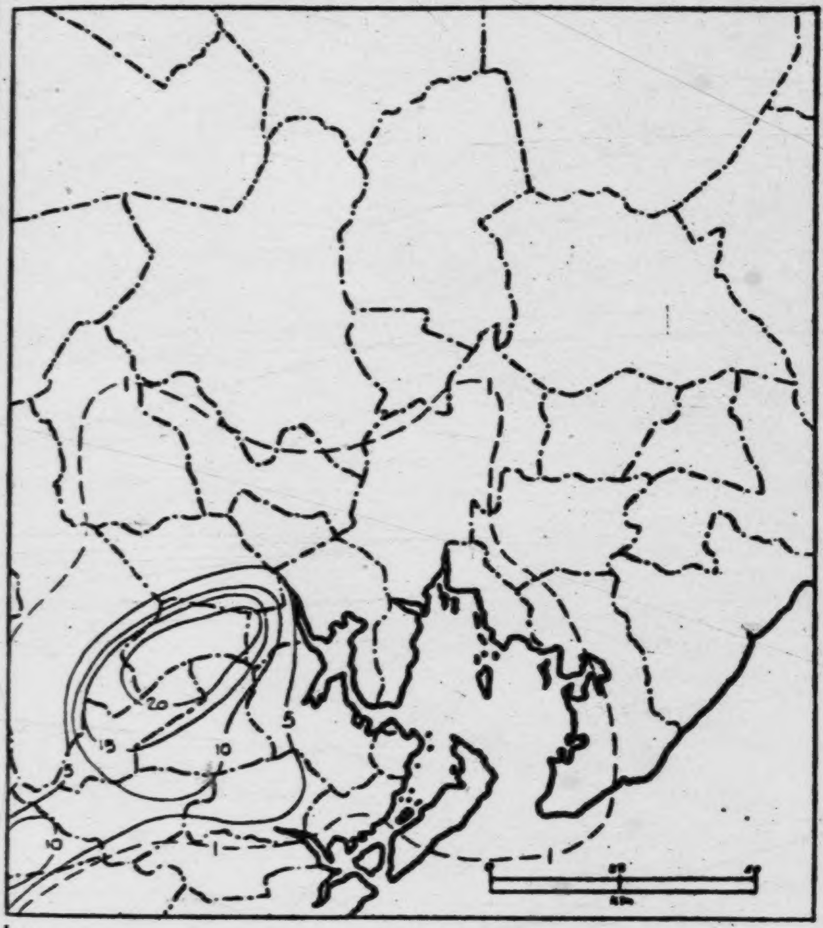

RECÔNCAVO OF BAHIA

Hectares of Manioc per Square Kilometer of Total Area—1948

Source data modified from Produção Agrícola: 1948.

MAP 23

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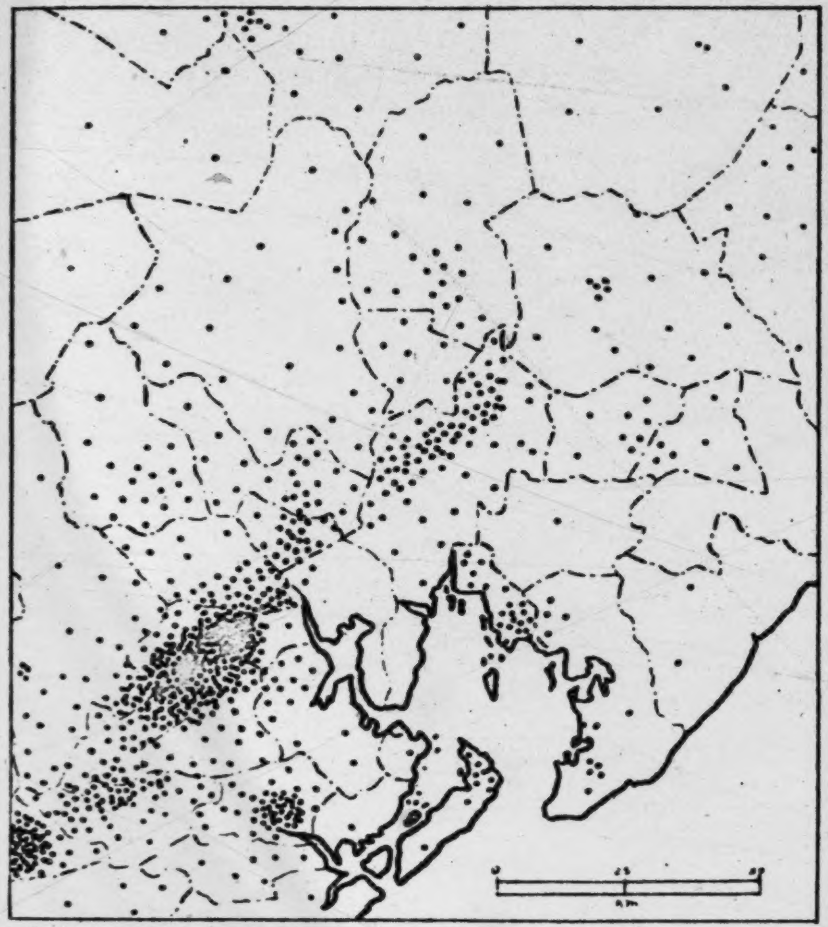

Each dot = 500 metric tons

RECONCAVO OF BAHIA

Production of Manioc--1948

Source data modified from Produção Agrícola: 1948.

Map 24

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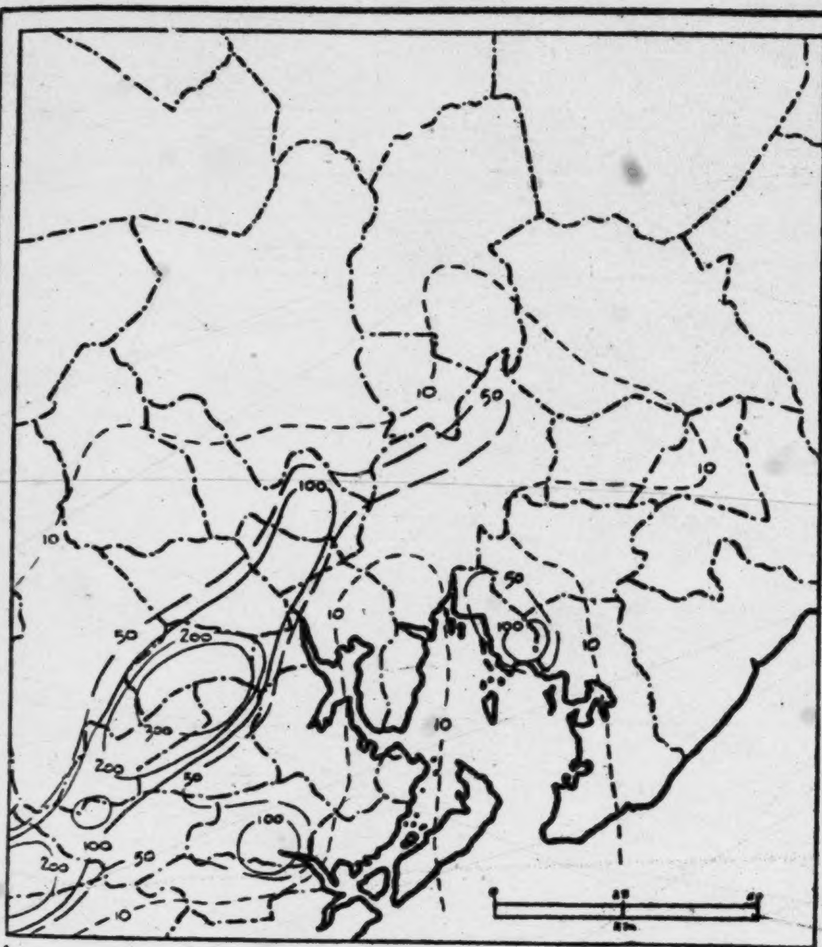
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RECÔNCAVO OF BAHIA

Tons of Manioc per Square Kilometer of Total Area—1948

Source data modified from Produção Agrícola: 1948.

MAP 25

244 433 311 manioc and produced 38 per cent of its 393,720 tons of harvested roots. Within this sub-region manioc occupied up to 20 per cent of the total land area, i.e., 20 hectares per square kilometer (Map 23). [249] Despite the intensity of cultivation and the concentration of production, the crop is viewed by the people primarily as a means--subsistence--to an end-- [242] leaf tobacco production.[9] Manioc characteristically succeeds tobacco in the field and fallow rotation system and is used to extract the maximum possible value from such nutrients as remain in the soil.[10]

244 249 A close areal and functional relationship between the two crops is characteristic also of the linear zone of manioc cultivation which follows the belt of Intermediate Hills and the inner edge of the Uplands from the Rio Paraguaçu--at Cachoeira--to Irará. Much the same relationship exists in Santo Estêvão in the extreme west of the Recôncavo, where manioc, and tobacco, cultivation is concentrated in a zone of low serras. Apparently tobacco cultivation has been fixed by the greater precipitation around these serras, and manioc is grown in association.

The major southwestern concentration of manioc is continued beyond the Recôncavo along a belt extending through Santo Antônio and into the "coffee zone."[11] The cluster of manioc around the cidade of Santo Antônio is circum-urban, but the principal functional association is with tobacco cultivation, rather than with the small urban market. [443] On the other hand, the concentration of manioc production around the city of Nazaré reflects a dependency on the local urban market and probably on the market of Salvador. Minor concentrations of cultivation in northern Itaparica and around Salvador also are related primarily to the market of the capital city.

244 311 The relative place of manioc within the agricultural system, as measured by the per cent of the total cropland which it occupies, varies widely within the Recôncavo (Map 26). The statistical extremes are

[TEXT CONTINUED ON PAGE 156]

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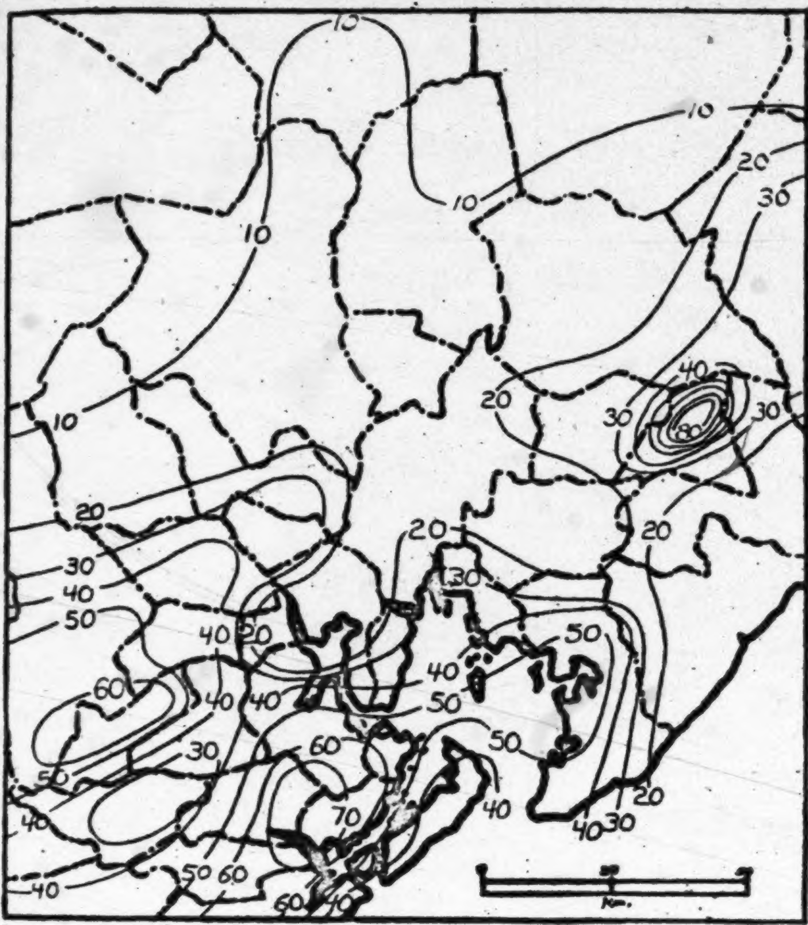
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RECÔNCAVO OF BAHIA

Per cent of Cropland in Manioc--1948

Source data modified from Produção Agrícola: 1948.

MAP 26

244 311 represented by two adjacent municípios of the Eastern and Central Recôncavo--Pojuca, where manioc occupied 81 per cent of the total cropland in 1948, and São Sebastião, where it occupied only 2 per cent. However, the significance of this contrast is diminished when it is seen that the total cropland of all crops in these municípios was only .8 per cent and 4.7 per cent, respectively, of the total land area. In those municípios where over 5 per cent of the land area was cultivated, the range was from 8 per cent of the cropland in manioc--Irará--to 60 per cent--Conceição do Almeida.

244 241 311 There are two major zones in which manioc has pre-empted the cropland, both of which are marginal to a belt of commercial production of tobacco, sugar cane, or coffee which follows the forest and scrub-forest transition from the coffee zone northward into the Southwester Recôncavo. This commercial crop belt is paralleled on the east by a zone of manioc cultivation in the forested areas back of the beach line--a zone which is a continuation of an extensive area of monocultural shifting cultivation of manioc centered farther south.[12] Around the city of Nazaré, which lies very near the southern limit of the Recôncavo, as much as 70 per cent of the cropland is in manioc. The cultivation of manioc is also important on the sandy forested zone west of the Bay as far north as the estuary of the Paraguaçu and on the opposite side of the Bay north of Salvador. On the west side of the commercial crop belt, in Laje, Santo Antônio, and the Southwestern Recôncavo, there is another zone in which manioc is the dominant crop. In the dry caatinga the areas of cultivation are concentrated around the low serras west of the Recôncavo. However, the manioc which occupied up to 60 per cent of the cultivated area along the western limit of Conceição do Almeida in 1948 was grown as a part of the tobacco-manioc system.

244 311 From the latitude of the head of the Bay northward, manioc appears as a dominant crop only in the município of Pojuca. In the Central Recôncavo, around the perimeter of the sugar cane area, manioc generally occupied, in 1948, less than 30 per cent of the cropland. In the north, [243] along the borders of the Recôncavo, the share of manioc in the cropland dropped to 10 per cent, and it was replaced by corn and beans as the basis of the subsistence economy.

244 311 433 The yield of manioc in the areas of heavy production was relatively low--10 to 15 tons of roots per hectare--compared to the Central Recôncavo, which produced small quantities at 30 tons per hectare (Map 27). These [134] differences in yield are related in part to the difference in soil fertility between the Cretaceous soils of the Central Recôncavo and the sandy loams of the Southwest. In addition, manioc is cultivated alone in the former zone, but follows the soil-taxing tobacco plant on the fields of the Southwest, thus further reducing the yield. The mean yield of manioc in the Recôncavo in 1948 was 14 tons per hectare, which is close to the 13 tons per hectare of Brazil and of the French Cameroons, but much higher than the 7 tons per hectare of Java and Madura.[13]

244 249 Manioc is, then, a crop characteristic of most parts of the Recôncavo and the surrounding zone, except in the sugar cane area and [242] the Tabular Uplands. The area of greatest concentration of cultivation and production is the Southwestern Recôncavo where manioc is integrated with tobacco production in a system of land rotation. In addition, as discussed above, manioc has the greatest relative importance of the crops of two zones in which the total area cultivated is small: the southwestern belt of forested lowland and the drier, scrub-forest Crystalline Uplands.

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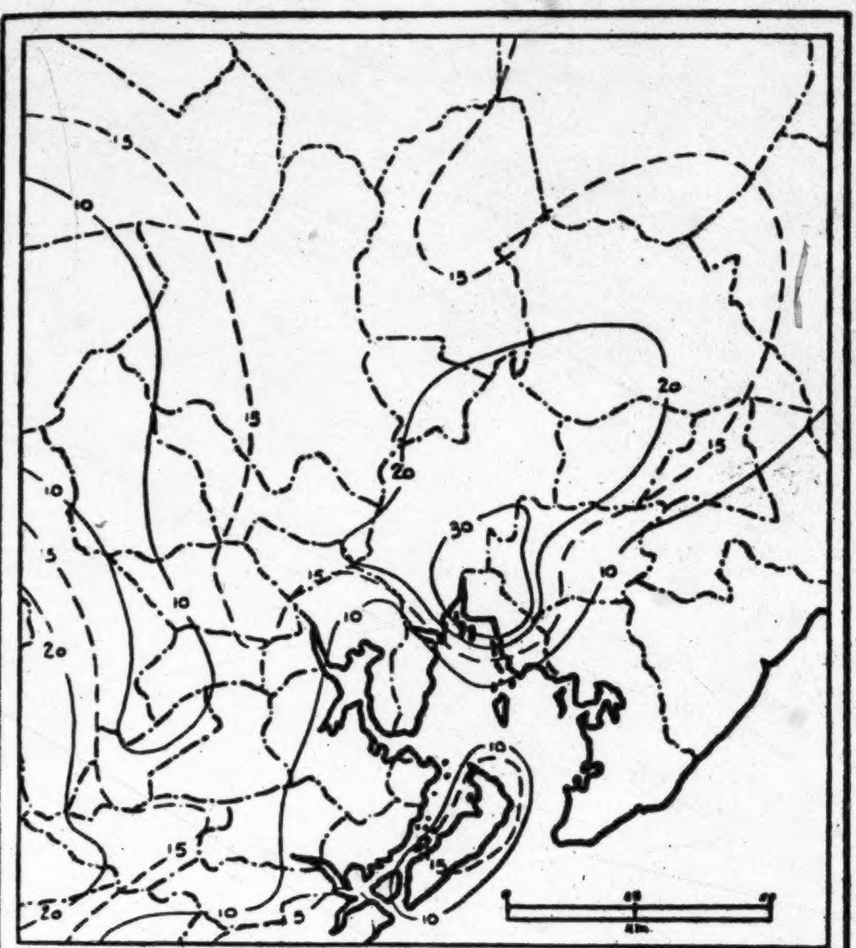
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Km.

RECÔNCAVO OF BAHIA

Yield of Manioc—1948

Tons per Hectare

Source data modified from Produção Agrícola: 1948.

MAP 27

249 *Tobacco*. Tobacco was originally cultivated in the Recôncavo as an adjunct to the sugar economy, but today it is the chief commercial product of the region. The state of Bahia, in which the Recôncavo plays so prominent a role, is the leading producer of tobacco in Brazil, though Minas Gerais and Rio Grande do Sul are almost as important in total quantity produced. However, the tobaccos of these states are not comparable, either in price or physical characteristics and ultimate utilization. Rio Grande do Sul specializes in cigarette tobacco, and Minas Gerais in rope tobacco, *fumo em corda*. In Bahia, and especially in the Recôncavo, the chief tobacco product is leaf, *fumo em fôlha*, which is used for cigars. In addition to the production in these centers, there is widespread small-scale cultivation of tobacco throughout the eastern half of Brazil, principally of *fumo em corda* for local consumption.

The tobacco of Bahia is a variety of *Nicotiana tobacum*, sold under the name of *Bahia-Brasil*. The original *Bahia-Brasil* apparently was borrowed from the local Indians or introduced from one of the other Brazilian settlements. From time to time other varieties, brought from Cuba, Sumatra, and the Connecticut Valley, have been introduced; but all have been submerged in the older native stock.

Both forms of tobacco--leaf and rope--are produced within the state of Bahia. The leaf tobacco, *fumo em fôlha*, is used for cigar filler and binder, and, in the cheaper grades of Brazilian cigars, for wrapper. The *Bahia-Brasil* leaf is reputed to have a distinctive aroma and is a preferred filler for certain types of European cigars. Its color is relatively dark, and because of the darkness and imperfections of the leaves, it is not used as wrapper in quality cigars. Havana, Sumatra, and Connecticut Valley leaf are imported in small quantities and used for wrapper in the more expensive grades of cigars produced in Brazil

249 Rope tobacco, *fumo em corda*, is a twist of sweetened, fermented tobacco of rope-like appearance which is smoked in pipes or in hand-made cigarettes or may be used as a chewing tobacco--however, the habit of [illegible]ng tobacco is not common in the Recôncavo. This type of tobacco
175 originally was produced for exchange in the slave trade, but at the
439 present time it is consumed almost exclusively by the rural lower class.
567 565 The urban lower class, formerly also consumers of rope tobacco, are turning increasingly to manufactured cigarettes, which for the most part are made from the tobacco grown in Rio Grande do Sul.

In general the production of leaf tobacco in Brasil is restricted to the Recôncavo and adjacent sections of Bahia, but rope tobacco is a product of the *sertão* of Bahia and the northeastern interior and of Minas Gerais. In Bahia the moderate rainfall and the sandy soils of the humid edge of the crystalline zone, in areas of *caatinga* or *mata* vegetation, produce a relatively mild leaf. The best--most valuable--leaf of Bahia is the *Mata* grade of the Southwestern Recôncavo and certain adjacent *municípios*.[14] Of the *Mata* grade, the highest quality comes from Cruz das Almas. Rope tobacco is made primarily from the harsh, strong leaves grown in the *sertão*, but it is made also from leaves of poorer plants or very strong end-of-season leaves of plants originally harvested for *fumo em fôlha*. Thus the Recôncavo may sometimes produce small quantities of rope tobacco, but the main Bahian production is north of the Reconcâvo in the *agreste*, especially in Inhambupe and Entre Rios.

The cultivation of tobacco will be discussed in the chapter on agricultural systems (Chapter VI), but one singular characteristic of its harvesting should be borne in mind in evaluating production statistics. In distinction to cultivation of quality tobacco in most other parts of the world, *Bahia-Brasil* is harvested repeatedly until

249 the plant will no longer produce marketable leaves. This is done by cutting the entire stalk just above the shoots and allowing the plant to re-grow. The cutting and harvesting are repeated several times, producing a large quantity of leaf, but the prolonged harvest has resulted in accelerated impoverishment of the soil.

249 311 433 In 1948 the Recôncavo planted almost 22,000 hectares of tobacco,[15] and harvested over 20,000 tons of leaf. Each of four Recôncavo municípios grew more than 2,000 hectares and harvested over 1,000 tons: Cruz das Almas, Conceição do Almeida, São Gonçalo, and Irará. Two outlying municípios—Alagoinhas and Santo Estêvão—cultivated 1,000 hectares or more. In addition, one município contiguous with the Recôncavo, Santo Antônio, had over 6,000 hectares of tobacco and harvested over 5,000 tons of leaf. In Bahia, this município was second only to Cruz das Almas in area and production of leaf tobacco.

The maps of area (Maps 28 and 29) and production (Maps 30 and 31) of tobacco indicate quite clearly the overwhelming importance of the Southwestern Reconcâvo and the adjacent northern part of Santo Antônio. This area resolves itself into two clusters (Table XIII). The most important of these is centered in Cruz das Almas and includes the adjacent parts of Conceição do Almeida, São Filipe, and Muritiba. In 1948 this cluster had about 10,000 hectares of tobacco—46 per cent of the Recôncavo tobacco area—and produced about 9,500 tons—48 per cent of the total crop. Because of the high quality of the leaf, the crop of this area was valued at almost 58 per cent of the total value of tobacco production in the Recôncavo.

The second most important cluster of leaf tobacco production in east-central Bahia is centered on the cidade of Santo Antônio and lies almost entirely outside of the Recôncavo. In 1948 the total area of tobacco in this cluster was about 6,500 hectares, and the total

[TEXT CONTINUED ON PAGE 166]

[P. 162]

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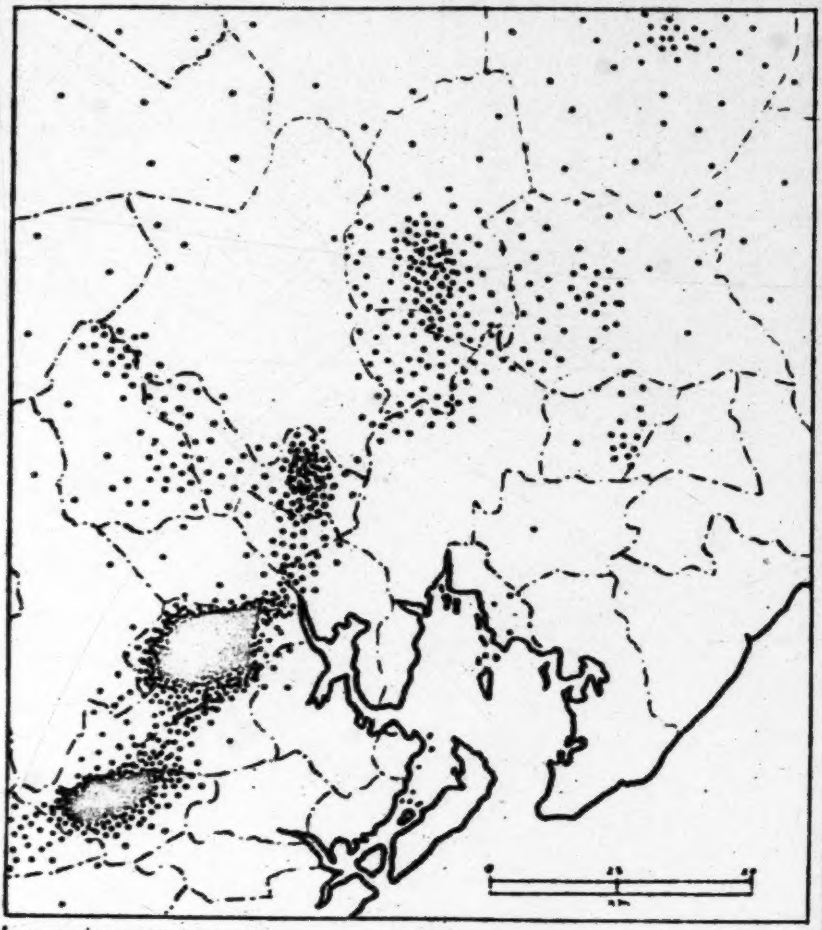

Each dot = 25 hectares

RECÔNCAVO OF BAHIA

Area in Tobacco—1948

Source of data: Produção Agrícola: 1948

MAP 28

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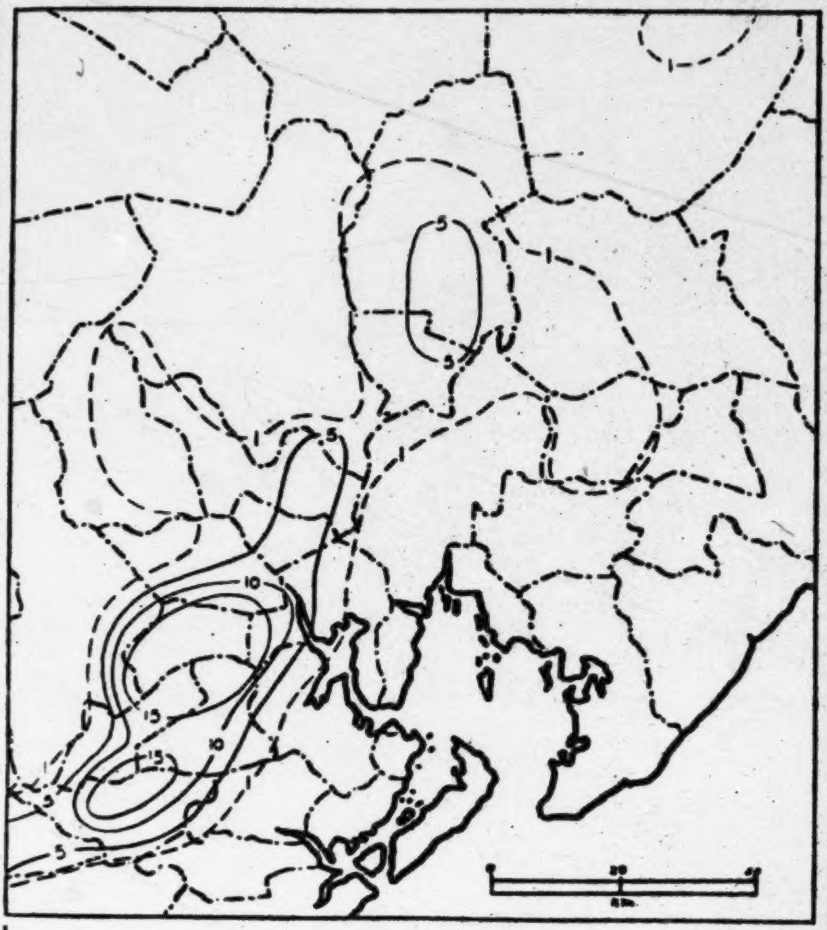
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Km.

RECÔNCAVO OF BAHIA

Hectares of Tobacco per Square Kilometer of Total Area--1948

Source of data: Produção Agrícola: 1948.

MAP 29

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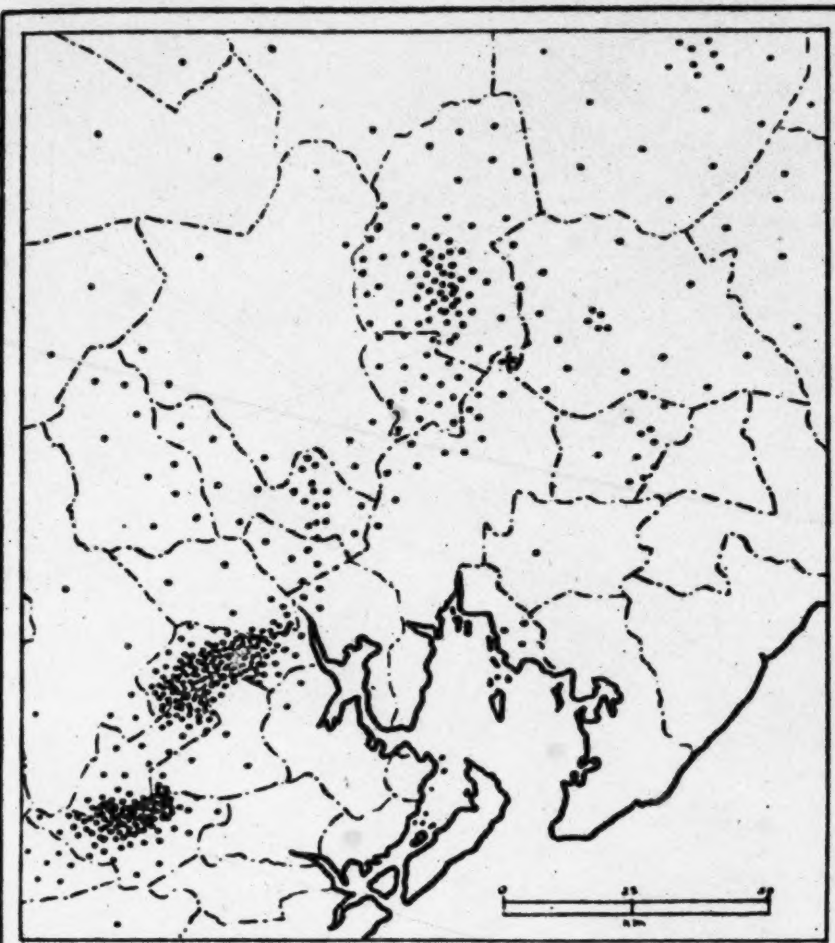

Each dot = 50,000 Kilograms

RECÔNCAVO OF BAHIA

Production of Tobacco--1948

Source of data: Produção Agrícola: 1948.

MAP 30

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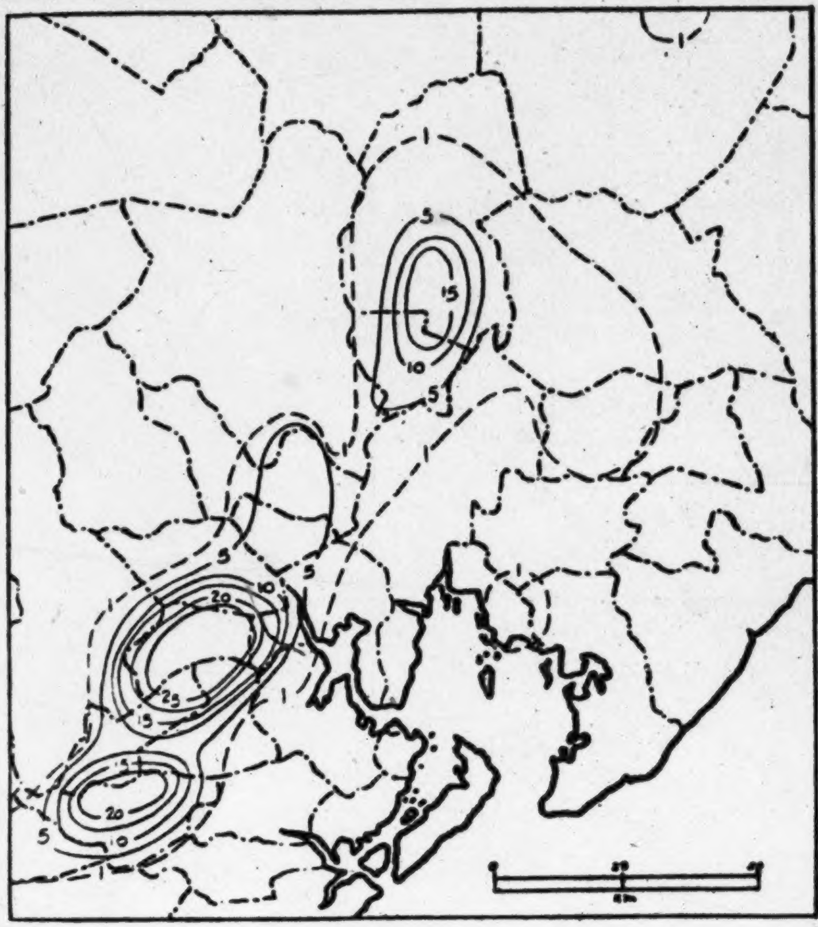
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Km

RECÔNCAVO OF BAHIA

Tons of Tobacco per Square Kilometer of Total Area—1948

Source of data: Produção Agrícola: 1948.

MAP 31

TABLE XIII

PRINCIPAL CENTERS OF TOBACCO PRODUCTION IN THE RECÔNCAVO AND IN BRAZIL IN 1948

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433

	Area (ha.)	Production (tons)
Southwestern Recôncavo:		
Cruz das Almas (all)	6,850	6,680
Conceição do Almeida (part)	2,000	2,000
São Filipe (part)	500	480
Muritiba (part)	810	500
Total	10,160	9,660
Santo Antônio:		
Santo Antônio (all)	6,200	5,250
Conceição do Almeida (part)	200	400
São Filipe (part)	190	190
Total	6,590	5,840
São Gonçalo (part)	2,000	900
Irará (part)*	2,500	3,000
Total - Principal Centers	21,250	19,400
Total - Recôncavo	21,886	20,191
Total - State of Bahia**	44,248	35,758
Total - State of Minas Gerais**	23,452	13,340
Total - Rio Grande do Sul***	40,236	44,495

*Irará produced a relatively large amount of tobacco for its area, but this was of a stronger and less valuable type of leaf tobacco ("Feira").

**Including a large quantity of rope tobacco--fumo em corda.

***Principally cigarette tobacco.

Source: Produção Agrícola: 1948.

production about 5,800 tons, so that it was somewhat over one-half as important as the Southwestern Recôncavo cluster discussed above.

Two lesser clusters centralize tobacco cultivation north of the Rio Paraguaçu. One is around the cidade of São Gonçalo, with about 2,000 hectares and 900 tons of tobacco in 1948. In the Northern Recôncavo, Irará was the center of a less compact concentration, with about 2,500 hectares and 3,000 tons of tobacco in 1948.

249 In addition to these major and minor concentrations of production, there was scattered cultivation in most of the outer ring of municípios of the Recôncavo, especially in Catu, in Alagoinhas, and in Santo Estêvão and adjacent western São Gonçalo. On the other hand, tobacco cultivation was conspicuously absent in the Central and Southern Recôncavo.

249 311 In 1948 tobacco was grown on 27 per cent of the total cropland of the region. The zone of intensive tobacco production, as shown by the proportion of the cultivated land which it occupies, is clearly revealed on the accompanying map (Map 32). In a continuous belt, which follows the humid edges of the Uplands and adjacent Intermediate Hills from Santo Antônio to Catu, tobacco was grown on over 30 per cent of all cropland in 1948. There were extensive areas in which over half the cultivated land was in tobacco—a remarkable showing for a non-food commercial crop grown on a small scale by semi-subsistence cultivators.

The gradients which separate the belt of intensive tobacco production from the Bay littoral and from the Central Recôncavo are very steep. On the other hand, the inland transition from intensive tobacco production to the scattered cultivation of the dry caatinga is very gradual. In the lowlands tobacco almost everywhere occupied less than 10 per cent of the cultivated area in 1948; in the caatinga to the west it was grown on 10 to 20 per cent of the total cropland.

249 134 132 There is a basic association between tobacco cultivation and the Crystalline and Tabular Upland; production is concentrated along the wetter, inner edge of these formations, in a zone which closely corresponds to the forest and scrub forest boundary. Tobacco is practically excluded from the humid Coastal Plain and littoral sections of the Intermediate Hills. It might be assumed that the location of tobacco is a result of the monopolization of the humid, clay-soil Coastal Plain

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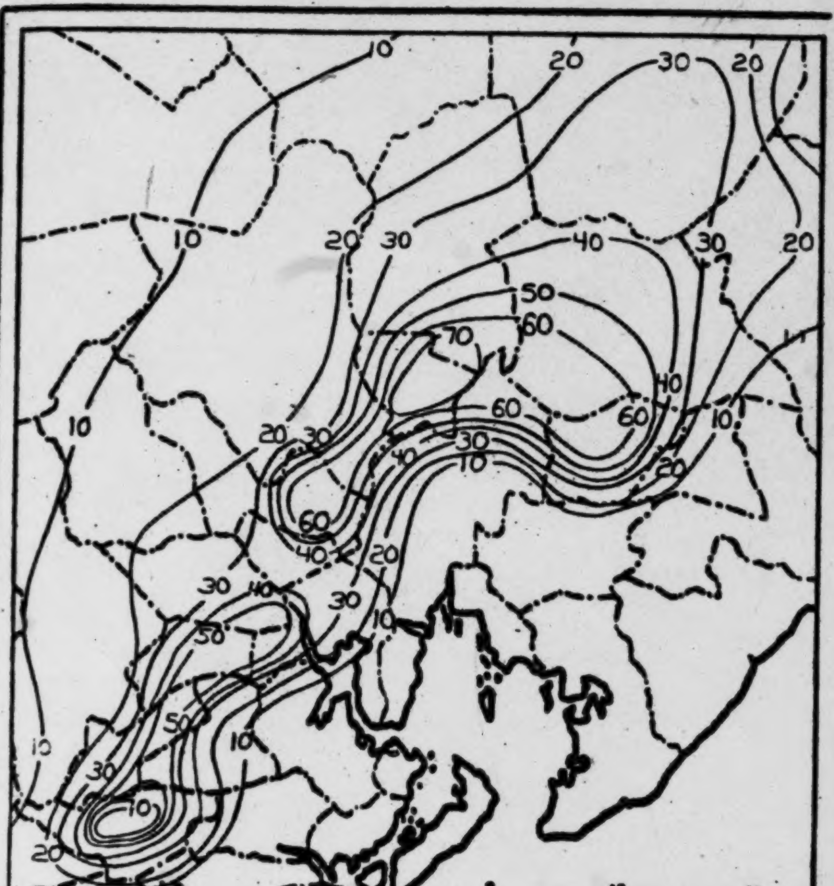
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RECÔNCAVO OF BAHIA

Per cent of Cropland in Tobacco—1948

Source of data: Produção Agrícola: 1948.

MAP 32

249 by sugar or other commercial crops, but this does not appear to be the
134 case. There are a few patches of tobacco in the garden plots of sugar
132 cane workers, but the small quantity of tobacco produced in the Central Recôncavo is rank and harsh, despite cultivation practices almost identical with the high-quality areas. Apparently high grade leaf production is excluded by the climate-soil complex of this zone.

Local agronomists and cultivators familiar with tobacco cultivation insist that such areas as Cruz das Almas and São Gonçalo are optimum for tobacco, and certainly the leaf of these areas brings the best price. It is said that the best tobacco in these areas is produced on the "poor" soils of the upland surfaces--leached sandy loams. In the Southwestern Recôncavo the "better" soils--that is, heavier soils found on the slopes and bottomlands--are not used for tobacco, although they produce good yields of corn, beans, or manioc. Precipitation is also a very important locational factor, both indirectly, as an agent in soil formation, and directly, as a source of moisture for the plants. Too little moisture will produce a gummy tobacco which is very difficult to cure. Too much moisture, a rarity in these areas, produces a washed-out, insipid leaf.

A comparison of the maps of tobacco types[16] (Map 138) and of soils (Map 6) and precipitation (Maps 7 and 8) indicates quite clearly that the best grade of tobacco--"Mata"--is grown on the most humid section of the zone of crystalline soils, i.e, the Southwestern Recôncavo and Santo Antônio. This is also, of course, the area of most intensive production. In general this same combination of physical elements is characteristic of the smaller "Mata" area around São Gonçalo.

The second most valuable grade of tobacco, "Caatinga," is grown west of the Southwestern Recôncavo and, within the Recôncavo, in

249 134 132 Santo Estêvão. The third grade--"Feira"--is grown on the humid edge of the sandy Tertiary uplands. This suggests that it is soil which is the immediate control of quality, although precipitation is the over-all factor. Although the southern part of the zone of Tertiary soils is more humid than the crystalline zone peripheral to the Recôncavo, the tobacco of the former--"Feira"--is less valuable than the "Caatinga" grade of the latter. The drier Tertiary zone produces only fumo em corda but the even drier crystalline zone, stretching west to the Chapada Diamantina, manages to produce the cheap but salable "Sertão" leaf. Thus in every case the crystalline soils, with equal or even less precipitation than the Tertiary zone, produce a better grade of leaf tobacco.

249 433 In 1948 the yields of the main zones of tobacco cultivation were from 750 to 1,000 kilograms per hectare (Map 33). Yields were higher in the Central Recôncavo, where there is only trivial production of low quality leaf. Yields were also higher in isolated sections of the "Sertão" and "Caatinga" grade zones to the west.[17] The mean yield of the Recôncavo, 840 kilograms per hectare, was slightly above the 808 kilograms per hectare of the state of Bahia as a whole. This yield compares very favorably with the yield of Cuba, 640 kilograms per hectare, and Indonesia, 530 to 650 kilograms per hectare on Estates, but is lower than that of Mexico, 1,010, Canada, 1,360, or the United States, 1,400.[18]

[241] The production of most of the chief crops of the Recôncavo is somewhat stabilized by steady demand for food--in the case of manioc, corn, and beans--or by government control--in the case of sugar cane. In contrast, tobacco is a highly speculative and mobile crop. It is produced primarily by small cultivators in anticipation of a combination

[TEXT CONTINUED ON PAGE 172]

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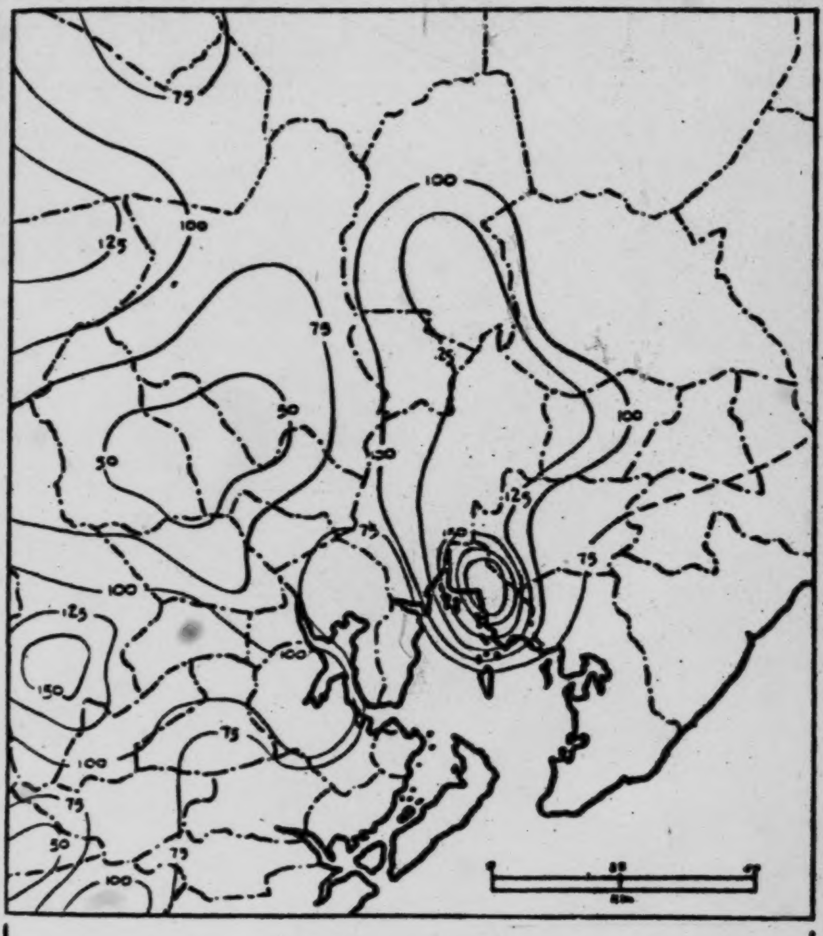
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75

RECÔNCAVO OF BAHIA

Yield of Tobacco--1948

Tons of Kilograms per Hectare

Source of data: Produção Agrícola: 1948.

MAP 33

249
433

of high yield and high prices. Lack of capital or, as a result of a low price during the preceding year, lack of incentive may cause planted area to fall very low. Optimism generated by the high price of the preceding year or a relatively favorable source of credit may cause planted area to be increased very strongly. Thus the curve of planted area plunges up and down, usually lagging a year or so behind prices, as the small cultivator and his creditor, the merchant-tobacco buyer, vainly pursue a "killing."[19]

Planted area is not the only major variable involved in tobacco cultivation. Tobacco, in distinction to sugar cane, is grown along the drier margins of the Recôncavo on "poor" or porous soils. The variations of precipitation during both the growing and the curing season, in combination with the irregularities of cultivation, have resulted in an ever-changing level of production. In addition, tobacco production like many speculative enterprises—and this is very characteristic of Brasil—is highly mobile. During the decade 1942 to 1951 the production of some municípios waxed and waned, while others burst like novas into large scale cultivation and then rapidly faded away.[20]

In the decade 1942 to 1951 the production in Cruz das Almas rose steadily to a peak in 1946 and then fell away to one-quarter of the maximum. Santo Antônio grew more rapidly, reached its peak in the same year, and then slowly declined to 50 per cent of the peak. Conceição do Almeida entered the decade strong, slumped in 1946, and then stabilized at the old level of production. São Gonçalo was stabilized from 1941 to 1946, dropped 90 per cent in 1947, and then rose slowly throughout the rest of the decade. In Irará the peak was 1944, the slump 1950. During this period the production of the state as a whole rose slowly to a 1945 maximum and fell gradually until 1951. It

249 433 is apparent that the production of the Scuthwestern Recôncavo and of Santo Antônio, the pre-eminent concentrations, fell away as a result of a drop in prices which began in 1947 and continued through the end of the decade. As high quality and high-cost producers, these areas were particularly hard hit by the falling price. On the other hand, Irará grows a cheaper leaf, at a lower production cost, and apparently survived the worst effects of the cut in price. The production in this município declined more slowly and then, in 1950, fell sharply as a result of the sêca (drought) which began in that year.

A comparison of the data for a longer period indicates that although production of the state of Bahia in 1946-1950 was about equal to that of 1931-1936, the cultivated area rose by about 25 per cent. Yields fell steadily during this period; the 900 to 1,000 kilograms per hectare of the early 30's had declined to 750 to 850 kilograms per hectare in the late 40's. The decline in yield, if not centered in the Recôncavo, was at least characteristic of the development of the region. The basic factor in the falling yields almost certainly was the exhaustion of the soil. In addition, manure, always costly, became 249 244 433 increasingly expensive and scarce. Tobacco, as has been indicated, is grown in conjunction with manioc under a land rotation system. The increasing demand for subsistence crops, particularly manioc, for the expanding population has put a continuously greater strain on the soil. [231] At the same time, the expansion of the cultivated area has driven out most of the livestock enterprises, increasing the cost of manure and putting it beyond the reach of many cultivators. As yields began to fall it became necessary to increase the planted area in tobacco and in subsistence crops to compensate the loss. Year by year the fallow period has been progressively shortened as the tobacco-manioc system

249 244 433 has made increasingly greater demands upon the land, at least during the decades between 1930 and 1950. In some areas, such as Cruz das Almas, the mean fallow period seems to have been reduced to a minimum of one or two years during the late 1940's. As the result of these developments, the *município* seems to be faced with the necessity of either a decrease in production or a radical reorganization of the system of cultivation.[21]

249 241 433 However, tobacco is to Cruz das Almas or São Gonçalo what sugar cane is to the Central Recôncavo—a way of life. Agriculture without tobacco is both economically and culturally distressing to the cultivator of the Southwestern Recôncavo. Unlike the sugar cane planter, the agri- [178] culturalists of the tobacco zone cultivate crops other than the chief commercial product, but as a cash crop they are very reluctant to accept any substitute. Habit is a very great force in the agriculture of all parts of the Recôncavo.

249 433 A result of the traditional and speculative orientation of the people of the tobacco zone is the extreme importance of tobacco—a commercial non-food crop—throughout the zone. In 1948, six *municípios* of the Recôncavo cultivated more tobacco than any other crop, and in five others it was second in importance. In only two *municípios*, Itaparica and Salvador, was it lower than fourth in area occupied.

243 433 *Corn*. Traditionally corn (*milho*) is a crop of the *caatinga* (scrub forest), and its greatest relative dominance is found just northwest of the Recôncavo in the *município* of Serrinha. It is, however, grown on a small scale throughout the Recôncavo, and there are at least two areas of intensive production. Corn is overshadowed by other crops, particularly manioc, tobacco, and sugar cane, in all parts of the Recôncavo except the North and the Northwest.

B BB 243 311 433 Like manioc and tobacco, corn is an indigenous crop which was borrowed from the Indians in the early phases of European settlement and which became a basic subsistence crop in Brazil. Its cultivation, like manioc, is a characteristic feature of the agricultural landscape over an extensive coastal belt from the Amazon to Rio Grande do Sul and, unlike manioc, beyond into northern Argentina. In Brazil, corn is cultivated on more land than any other crop, and in most states it is either the second or third crop in value. In the Recôncavo it is the fourth ranking crop in area of cultivation, but only the seventh in BB [244] the total value of production. The cultivation of corn is very closely associated, areally and functionally, with beans--"succatosh" is a common crop combination in the Northwestern Recôncavo and the adjoining region.[21]

BB 243 433 Corn also resembles manioc in the purpose of cultivation; it is primarily a subsistence crop for local consumption, but there are surplus producing areas with a rudimentary commercial corn economy. In those areas of the Recôncavo where corn is produced in small quantities, it is almost exclusively a minor subsistence crop which is eaten by the cultivator and his family, though a few ears or a small sack of shelled corn may be sold in the market for local consumption. Such semi-subsistence producers are usually small-scale farmers, squatters, or share-croppers. In the Northern and Northwestern Recôncavo, where cultivation of corn is more intensive, there are occasional large-scale corn growers, but the bulk of the area and production in this zone BB [438] belongs to small operators. Even these small producers usually sell their corn at the market—it is exchanged for the cheaper farinha de BB [262] mandioca. In the Recôncavo corn is used exclusively as a human food, and there is no corn-livestock complex.

BB 243 311 433 Only three municípios of the Recôncavo, all very large, had over 500 hectares of corn in 1948 or produced over 500 tons of shelled corn.

243 311 433 The Recôncavo as a whole had 9,679 hectares of corn, with a production of 10,283 tons. Of this, 87 per cent of the area and 84 per cent of the production was in Santo Estêvão, Feira de Santana, and Irará (Maps 34, 35, and 36). The area and production of the Recôncavo were about the same as for one adjacent *município*, Serrinha, which had 8,500 hectares and 11,590 tons of corn in 1948.

243 311 Most of the corn grown and produced in the Recôncavo comes from two compact concentrations, one around the *cidade* of Irará; the other around the *cidade* of Santo Estêvão. Elsewhere in the Recôncavo it is grown either on very widely scattered plots or as a "garden" crop.[23]

The concentration of corn production is the result of several
physical and economic factors. It is cultivated on the dry margins of
the Recôncavo, where only a few restricted areas can produce a crop.
243 Though a commercial product of moderate value, its weight- or bulk-price
[438] relationship is not highly favorable to long transportation to market--
[489] in contrast to tobacco, which tends to attach itself to even the smallest and most remote semi-subsistence plot, and in contrast to beef,
[491] which in Bahia is moved to market on the hoof. The concentration
around Santo Estêvão, which is on the main trunk highway to Feira de
Santana, is favorable for the transportation of the crop, and the
Irará concentration is linked to Feira by a generally passable road.
[251] In the more humid parts of the Recôncavo, corn is restricted not only
by its poor competitive position *vis-à-vis* sugar cane or tobacco, but
also by its harvest requirements; it must be harvested and stored in
the proper season, while manioc may be harvested as it is needed, a
great advantage for a subsistence crop.

243 311 433 Corn, although the second most important subsistence crop of the Recôncavo, occupied in 1948 only 12 per cent of the total cropland.

[TEXT CONTINUED ON PAGE 182]

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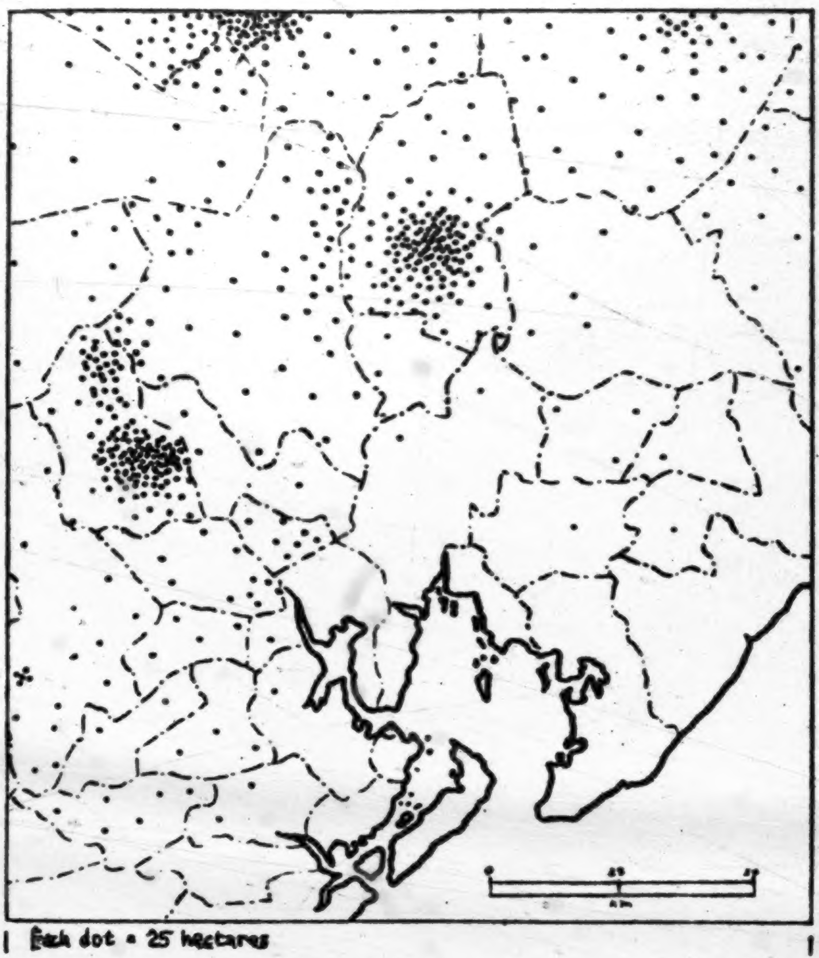


Each dot = 25 hectares

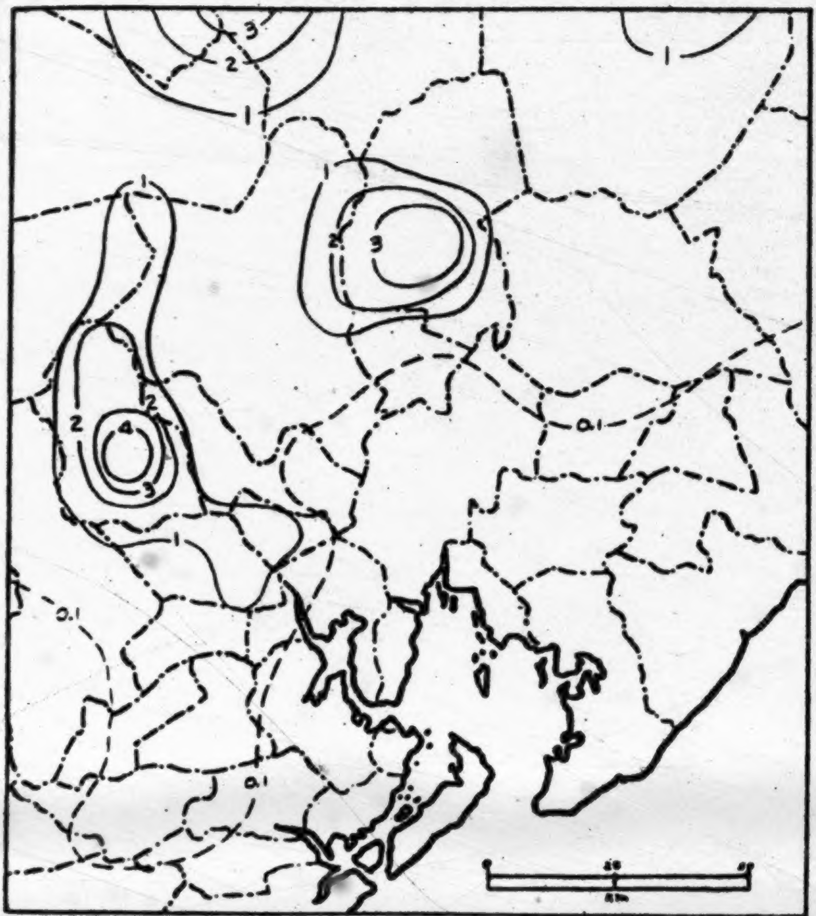
RECONCAVO OF BAHIA

Area in Corn--1948

Source of data; Produção Agricola; 1948.

MAP 34

*102
243
311


3
2
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2
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2
4
3
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0.1
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20
40
Km

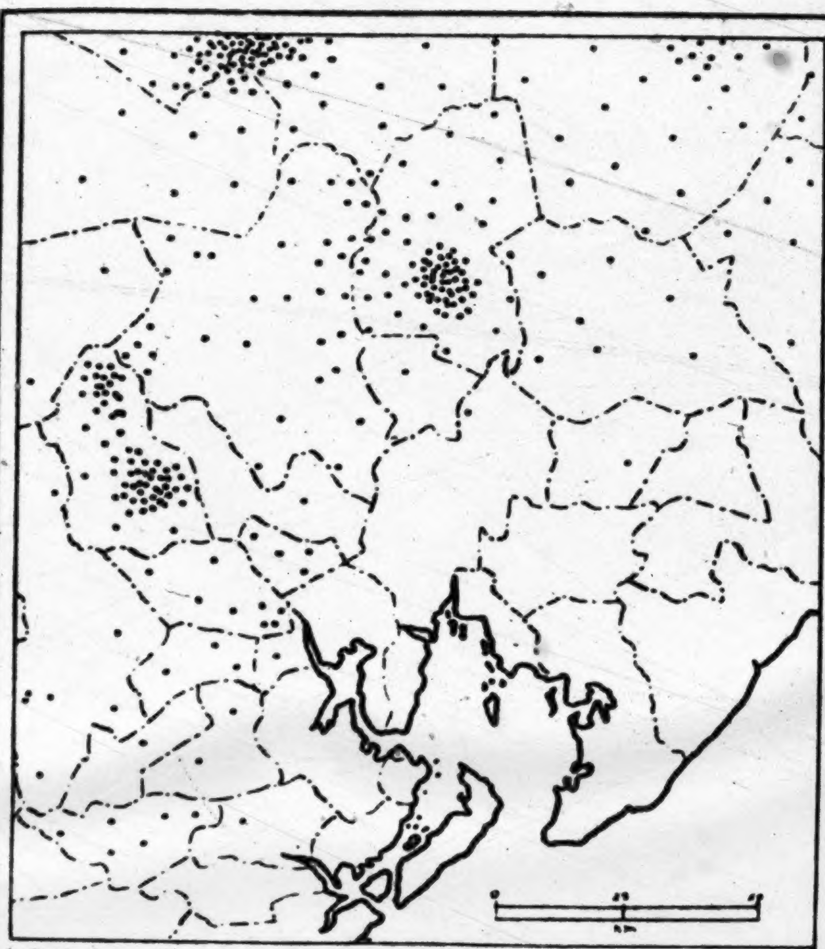
RECÔNCAVO OF BAHIA

Hectares of Corn per Square Kilometer of Total Area—1948

Source of data Produção Agrícola: 1948.

MAP 35

*102
243
311
433



Each dot - 50 metric tons

RECONCAVO OF BAHIA

Production of Corn--1948

Source of data: Produção Agrícola: 1948.

MAP 26

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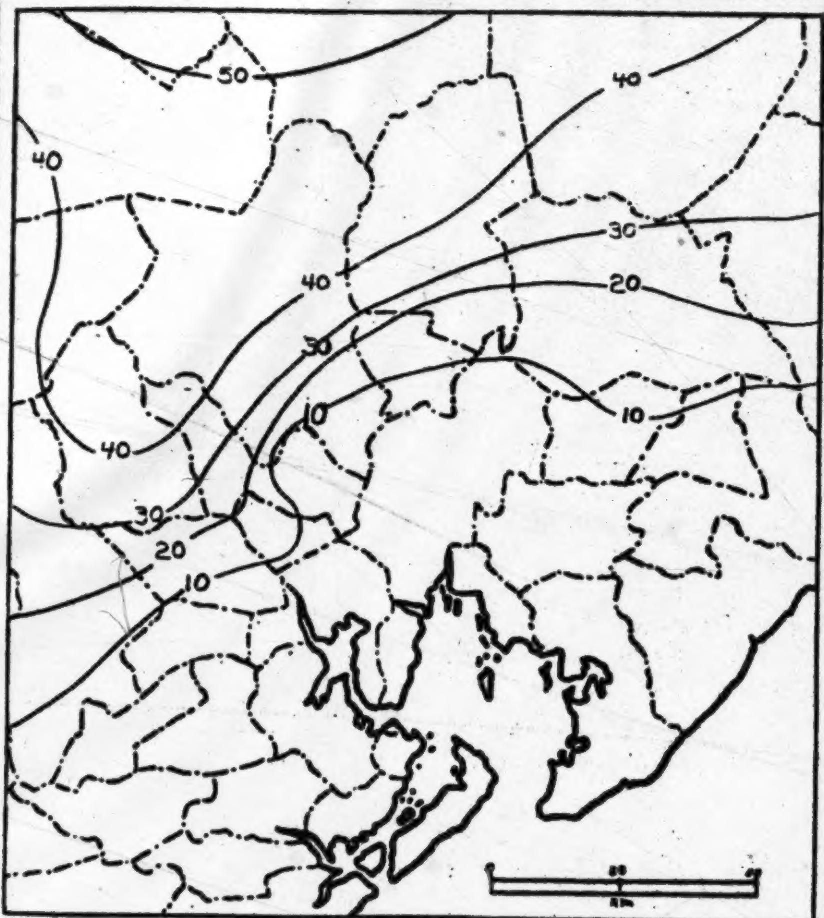
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RECONCAVO OF BAHIA

Per cent of Crcpland in Corn--1948

Source of data: Produção Agrícola: 1948.

MAP 37

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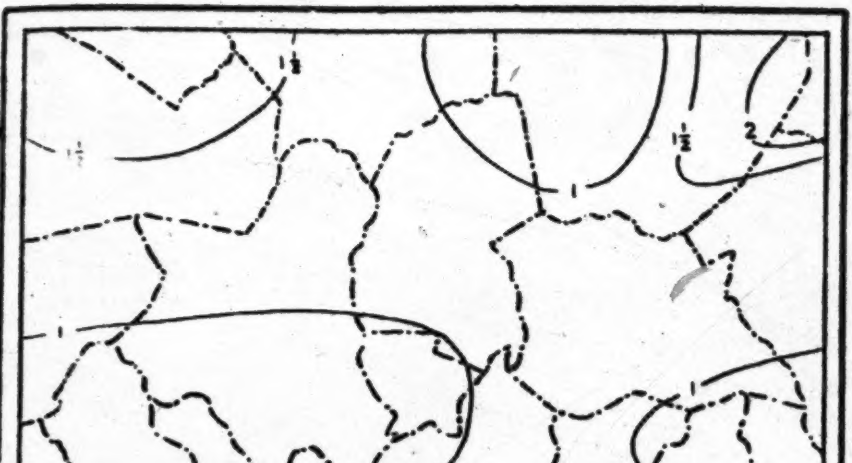
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Km

RECÔNCAVO OF BAHIA

Yield of Corn--1948

Tons per Hectare

Source of data: Produção Agrícola: 1948.

MAP 38

243 311 It is primarily a crop of the sertão of northeastern Bahia, but it has intruded upon the northern and western perimeter of the Recôncavo (Map 37). In three municípios--Irará, Feira de Santana, and Santo Estêvão--corn is the most extensively cultivated crop. Conversely, it is rarely seen in the humid lowlands and in the Southwestern Recôncavo. In these areas it is found only in very small, widely scattered plantings.

243 433 The mean yield of corn in the Recôncavo was 1.09 tons per hectare, compared to 1.27 for Brazil, 2.46 for the United States, 1.0 for the Belgian Congo, and .81 for Java and Madura. The accompanying map of corn yields shows a somewhat random pattern within the Recôncavo, since the total area and production were very small and local circumstances of cultivation highly variable (Map 38). However, the area of main production northwest of the Recôncavo had a relatively high yield—over 243 244 1.5 tons per hectare. In this area, corn, with beans, pre-empts the areas with the most productive soils and the greatest precipitation.

244 **Beans.** Feijão, or the common field bean (Phaseolus vulgaris), like manioc, tobacco, and corn, is an indigenous domesticate which became an important subsistence crop during the colonial period. Like corn, beans are more specifically associated with the dry sertão than [262] [252] with the Recôncavo. Most of the beans grown in Bahia are the black variety, feijão preto; the beans are dried and used with charque (dried beef) in a soup which is one of the basic subsistence foods of the Northeast. Beans of this and other similar varieties of the same species are grown throughout Brazil.

244 433 In area and in quantity of production, beans are slightly less important than corn in the Recôncavo, but the value of the bean crop is almost double that of corn. The patterns of distribution of these two crops are almost identical, and the physical and cultural factors

244 433 [311] involved are very similar (Maps 39, 40, and 41). In 1948 beans occupied 9 per cent of the total cropland of the Recôncavo. While the area of the greatest dominance of corn lies north of the Recôncavo, beans had the greatest relative importance in the west, in the município of Ipirá (Map 42). The reason for this minor difference in concentration is not apparent.

244 311 433 The yield pattern as revealed by the 1948 data is very distinctiv (Map 43). Relatively high yields were closely associated with the fores and scrub-forest transition from Santo Antônio in the south to Irará in the north, where, however, less than 10 per cent of the cropland was in beans. In Muritiba, Castro Alves, and Santo Antônio, where joint corn-bean cultivation is not always the rule, yields of both plants were high. In the Northern and Northwestern Recôncavo the yield pattern of the two crops, which are usually intercropped in this area, were very different. No explanation for these differences was found. The mean yield of beans in the Recôncavo in 1948 was 988 kilograms per hectare, higher than the 690 kilograms per hectare of Brazil, the 540 kilograms per hectare of French Equatorial Africa, or the 200 kilograms per hectare of India, but much lower than the 1,220 kilograms per hectare yield in the United States.

249 Sugar Cane. Much of the history and a good deal of the cultural geography of the Recôncavo could be written in terms of sugar cane [433] [178] cultivation. The colony of Bahia was organized around the cultivation of cane, and sugar was the mainstay of the colonial commercial economy until the last half of the nineteenth century. During the colonial period the cultivation of sugar cane acquired a prestige which it has never lost, despite the fact that it is no longer the most valuable nor, it seems likely, the most profitable crop of the Recôncavo.

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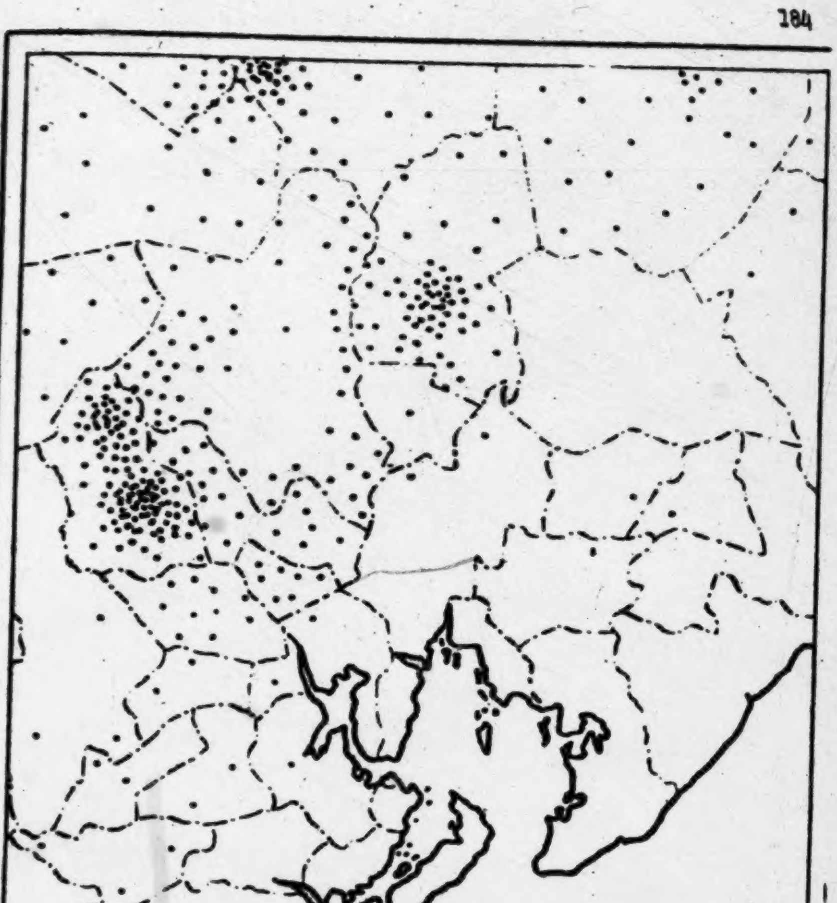


Each dot = 25 hectares

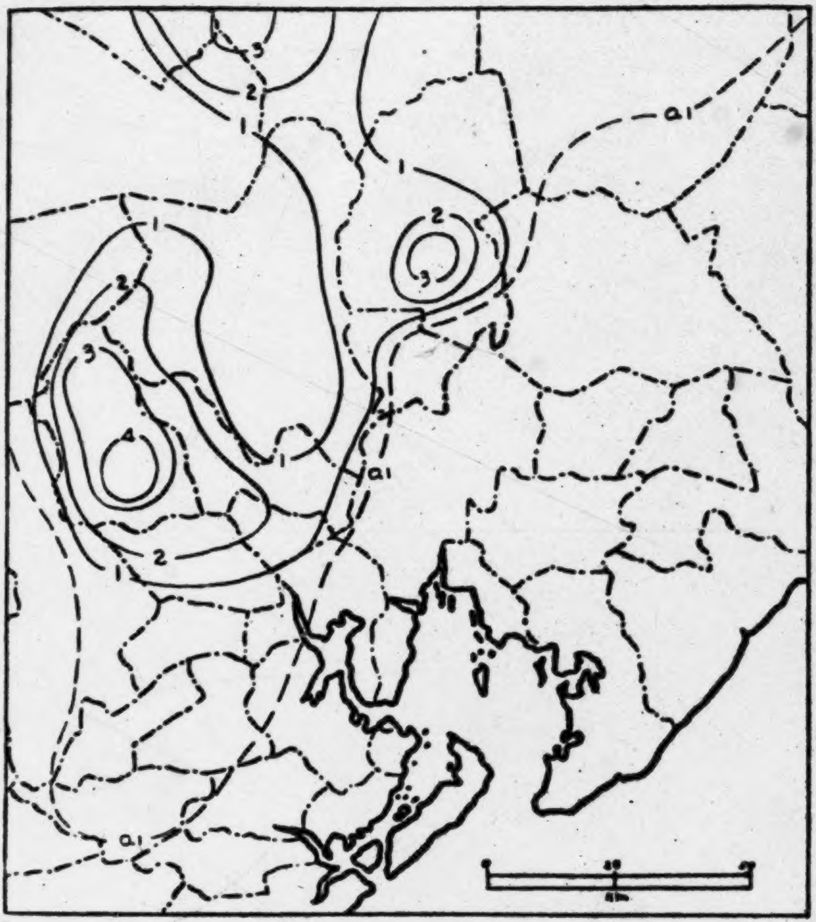
RECONCAVO OF BAHIA

Area in Beans--1948

Source of data: Produção Agrícola: 1948.

MAP 39

*102
244
311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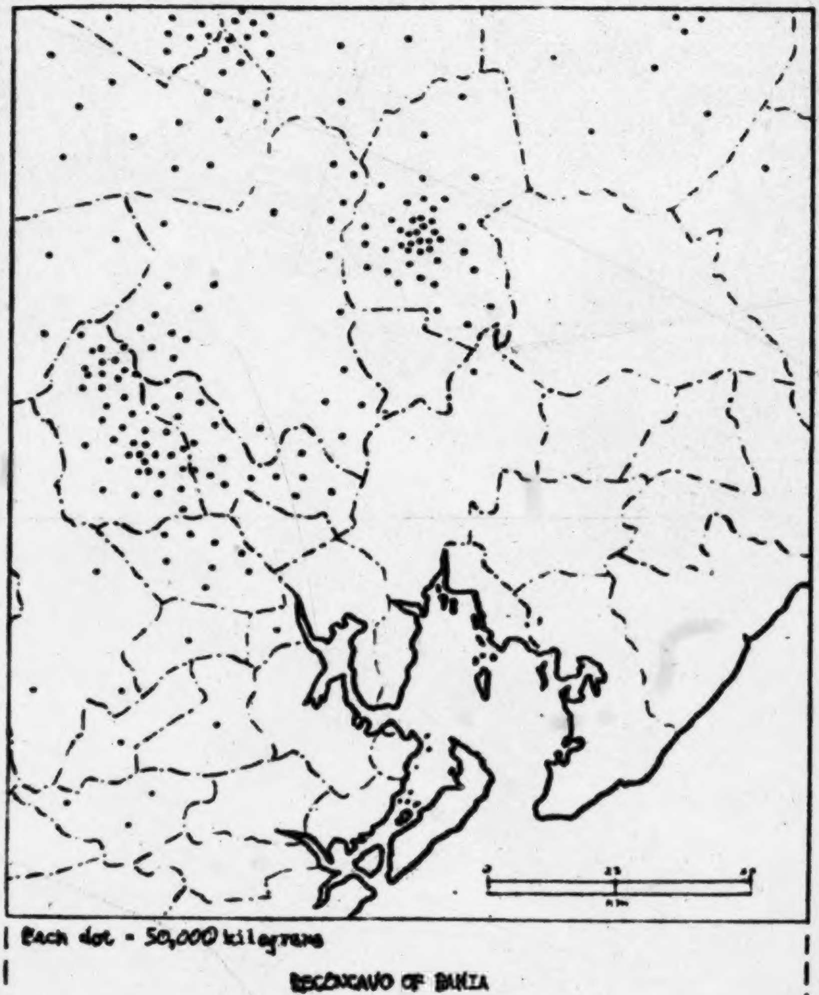
RECÔNCAVO OF BAHIA

Hectares of Beans per Square Kilometer of Total Area—1948

Source of data: Produção Agrícola: 1948.

MAP 40

*902
244
311
433



Each dot = 50,000 kilograms

RECONCAVO OF BAHIA

Production of Beans--1948

Source of data: Produção Agrícola: 1948.

MAP 41

*102
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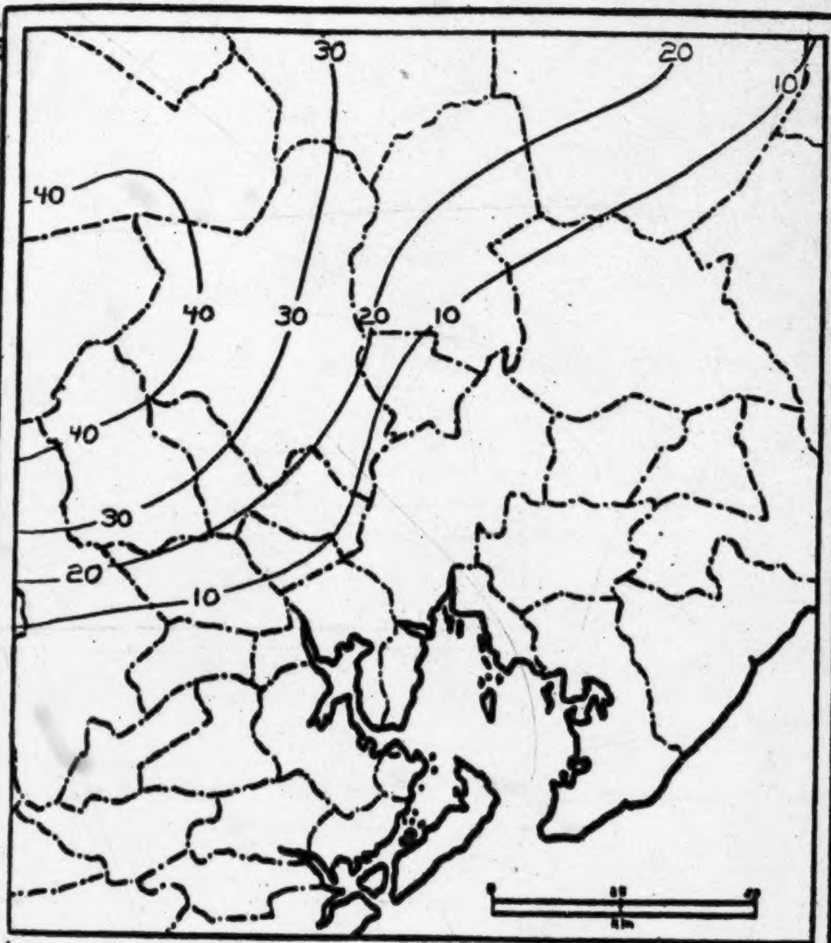
30
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RECÔNCAVO OF BAHIA

Per cent of Cropland in Beans--1948

Source of data: Produção Agrícola: 1948.

MAP 42

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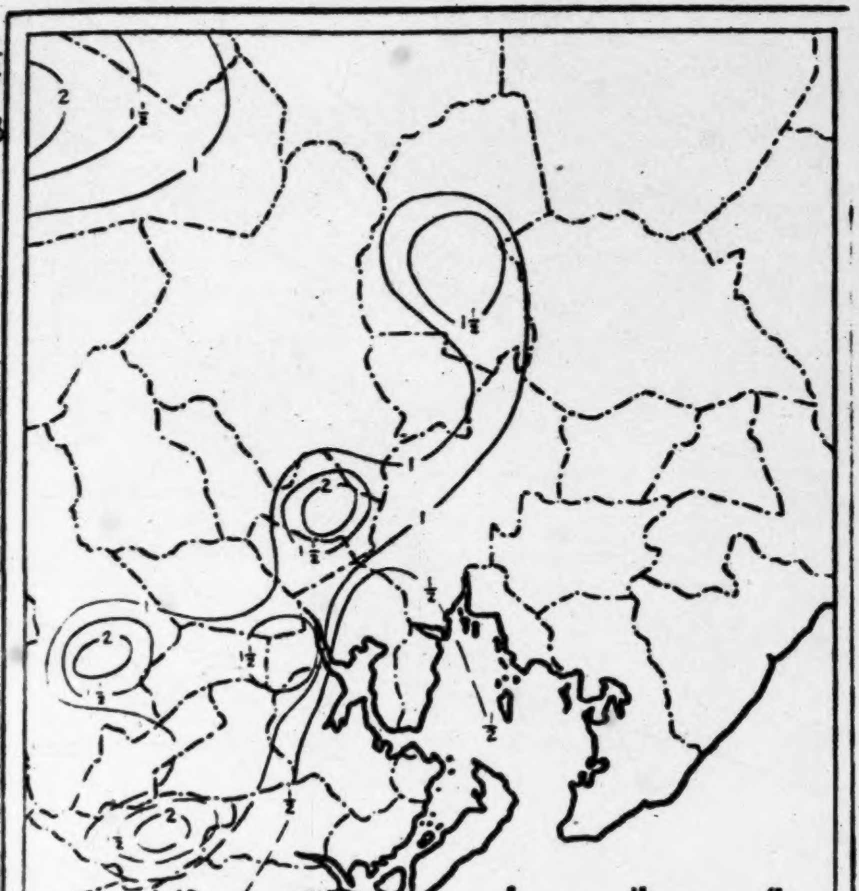
2
1½
1
2
1½
1
½
2
1½
½
2
1½
½
2
½
½
Km

RECÔNCAVO OF BAHIA

Yield of Beans--1948

Tons per Hectare

Source of data: Produção Agrícola: 1948.

MAP 43

B 249 433 Sugar cane is the fifth or sixth—depending upon the year—most valuable crop grown in Brazil, and it is cultivated, at least on a small scale, in all states of the country. Large scale commercial production, however, is confined to two areas—the Central-South (São Paulo, Rio de Janeiro, and Minas Gerais) and the Northeast (Paraíba, Pernambuco, Alagoas, and Bahia). Each of these states produced over one million tons of cane in 1948.

B BB 249 175 177 In distinction to the principal subsistence crops of the Recôncavo, sugar cane is an old world domesticate. The variety acquired by the Portuguese from the Arabs in North Africa and brought to the colony via the Madeira Islands was the sole type cultivated during most of the colonial period, but today a number of varieties of East or West Indian origin are grown.

BB 249 Sugar cane is differentiated from other crops of the Recôncavo
by the intensive monocultural character of its production. Tobacco and
manioc and corn and beans are grown jointly, but sugar cane shares the
BB land with no other crop. North of the cidade of Santo Amaro there is
[134] an extensive area of clay soils and undulating plain almost completely
[133] blanketed in bright green sugar cane. The monochrome is interrupted
only by a few pastured valley bottoms or by the widely scattered usinas
(sugar mills), plantation settlements, and villages. There are similar,
though less extensive landscapes wherever sugar cane is important in
other parts of the Recôncavo.

The system of cultivation of sugar cane is also very different from those employed in producing other crops in the Recôncavo. One planting is sufficient for several reasons, for the stalk re-develops from the root after the plant is harvested, though with progressively declining vigor. In Bahia, three, four, or five harvests from the

249 same planting are common--then the field is rested for a year and replanted to cane.[24]

249
311 Sugar cane is encountered in all parts of the Recôncavo, but it is produced commercially only in three very restricted and closely defined areas. Of the 11,695 hectares of sugar cane in the Recôncavo in 1948, over 6,000 hectares were in Santo Amaro and 650 hectares and 2,400 hectares, respectively, in adjacent São Francisco and São Sebastião (Map 44). The remaining one-third of the total sugar cane area was largely in São Filipe, 650 hectares, and Cachoeira, 530 hectares. The association between sugar cane cultivation and the Cretaceous soils is [134] very close. Within the Central Recôncavo, cane is grown only on the Cretaceous *massapê*, *salão*, and *arêia* soils; although there are occasional outliers of Tertiary sands, no cane was observed on these soils in the course of field investigation. Cane cultivation in São Filipe is associated with similar heavy soils--the so-called crystalline *massapê*. [433] In 1948 the Recôncavo produced 670,626 tons of cane, 39 per cent of the total of the state, but only 2 per cent of Brazil's production. Eighty-two per cent of the cane of the Recôncavo was produced in the Central Recôncavo sugar cane zone of Santo Amaro, São Francisco, and São Sebastião (Map 45).

Because sugar cane cultivation is so highly concentrated, the mean value of 15 per cent of the total cropland of the Recôncavo in sugar cane is somewhat misleading. What is significant is that an estimated 90 per cent of the cropland--excluding fallow land--on the Cretaceous coastal lowland at the head of the Bay was planted to cane in 1948 (Map 46). A similar, though smaller, monocultural zone lay at the head of the Bacia do Iguape in the *município* of Cachoeira. In the minor sugar cane area of São Filipe, cane production was less concentrated. There was also scattered cane cultivation on the lowlands

[TEXT CONTINUED ON PAGE 194]

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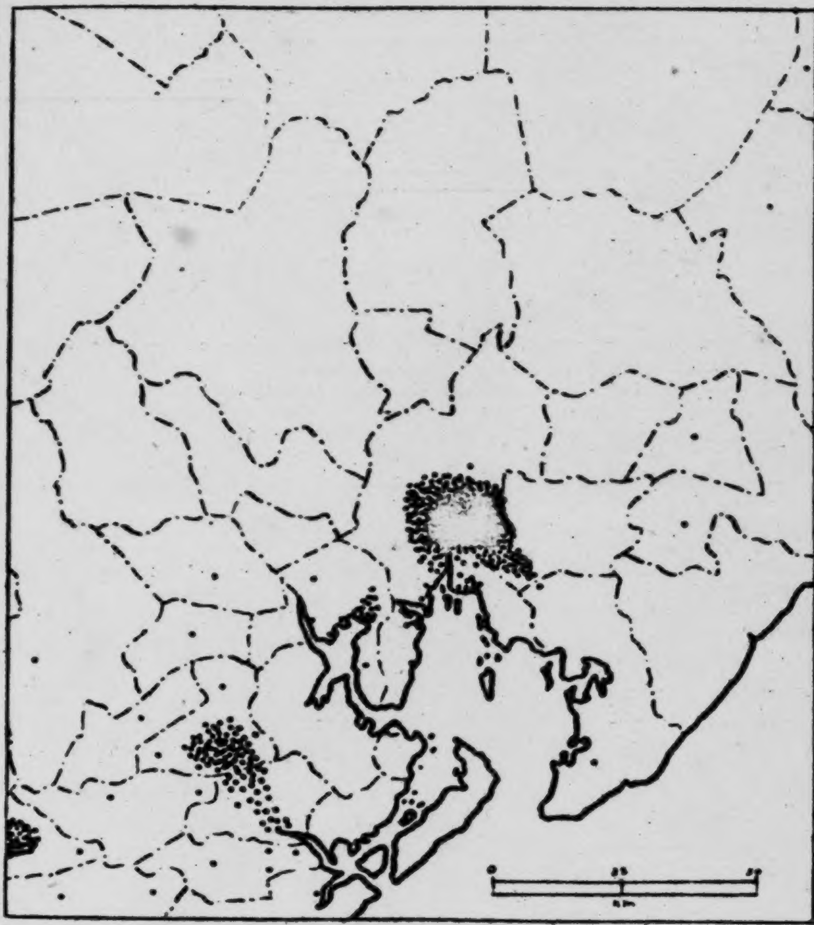

Each dot = 25 hectares

RECÔNCAVO OF BAHIA

Area in Sugar Cane--1948

Source of data: Produção Agrícola: 1948.

MAP 44

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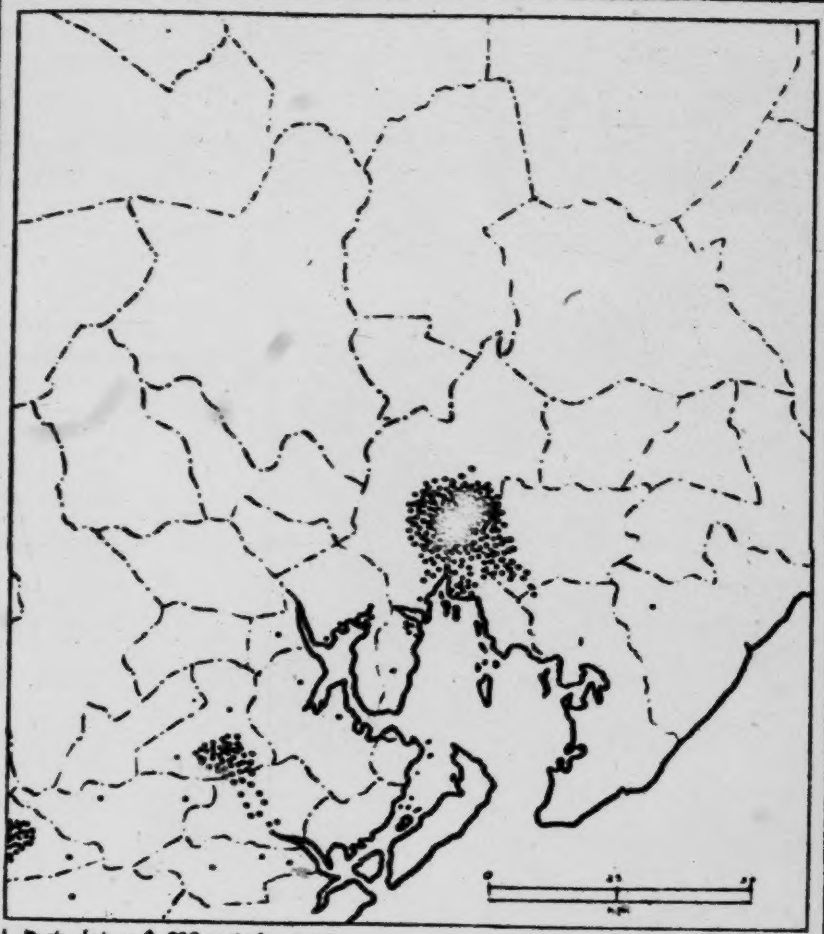

Each dot = 2,000 metric tons

RECONCAVO OF BAHIA

Production of Sugar Cane--1948

Source of data: Producção Agricola: 1948.

MAP 15

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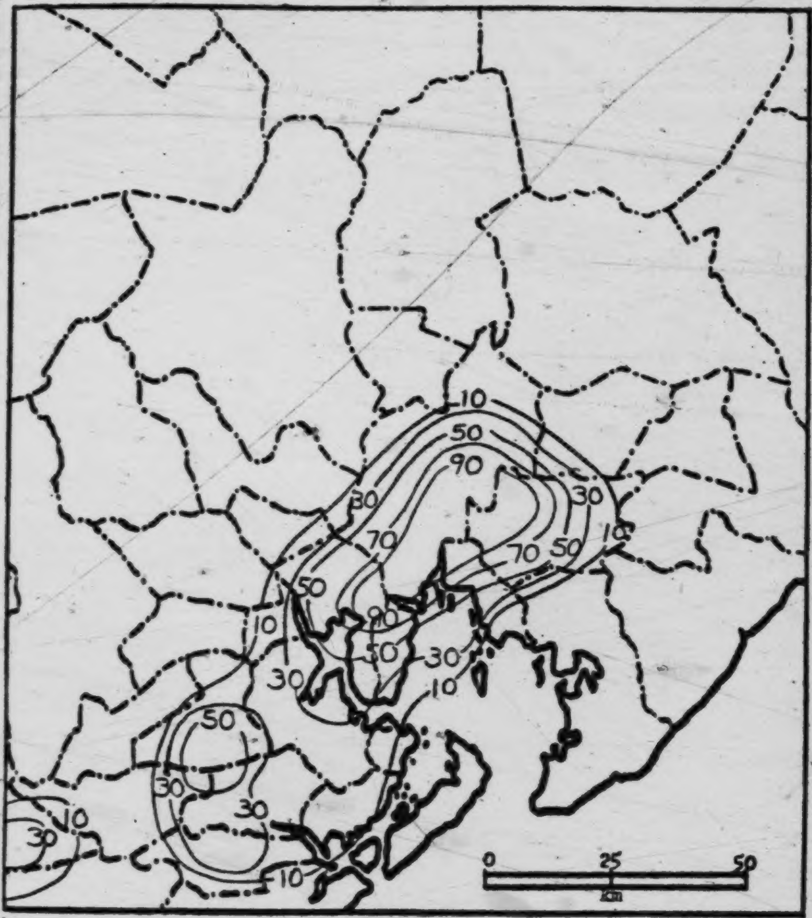
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50
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70
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0
25
50
Km

RECÔNCAVO OF BAHIA

Per cent of Cropland in Sugar Cane--1948

Source of data: Produção Agrícola: 1948.

MAP 46

249 311 and Intermediate Hills between and around these zones, but usually on an exceedingly small scale.

249 311 433 The yields calculated for 1948 were as follows:

Santo Amaro	65.7	tons	per	hectare
São Francisco	80.0	"	"	"
São Sebastião	41.2	"	"	"
Cachoeira	37.0	"	"	"
São Filipe	50.0	"	"	"

These may be compared with 38.7 tons per hectare for Brazil as a whole, 35.0 tons per hectare for Cuba, and 89.3 tons per hectare for Java and 249 433 134 257 Madura for the same year. The relatively low yields of Cachoeira and São Filipe are to be explained, at least in part, by the primitive character of cultivation and processing in these more remote areas. São Sebastião is a sort of frontier zone into which the big sugar mills are expanding their operations at the expense of smaller operators, but the methods of production are still less efficient than in the main production area, and the soils are sandier and less fertile. In Santo Amaro, yields are higher on account of generally better soils and techniques, but the demands of the large usinas require intensive and continuous cultivation on even the poorer soils. On the other hand, the less intensive cultivation in São Francisco, where the mills are smaller, allows a freer selection of soils, so that the yields of this area are the highest in the Recôncavo.

244 311 Sweet Potatoes and Peanuts. Two other American domesticates are grown in the Recôncavo, though on a small scale--peanuts and sweet potatoes. Both are cultivated primarily along the forest and scrub forest transition as auxiliary subsistence crops, in conjunction with manioc and tobacco. There are also scattered plots of these crops in most other parts of the Recôncavo. Neither crop occupied over 1 per cent of the total crop land of the region.

BB 244 311 433 The total area in sweet potatoes in 1948 was 344 hectares, the total production, 2,565 tons. No single município grew more than 100 hectares nor produced over 1,000 tons (Maps 47 and 48). In Cachoeira and Maragogipe, 3 per cent of the total cropland was in sweet potatoes in 1948. BB [438] The plants are grown on the slopes and in the sandier valley bottoms of the Intermediate Hills and are sold through the local markets. On a smaller scale, sweet potatoes are grown as a minor supplementary crop in the Southwestern Recôncavo. The mean Recôncavo yield was 7.5 tons per hectare, close to the mean Brazilian 1948-1950 yield of 8 tons per hectare. Sweet potatoes are grown in the Recôncavo both as "garden" crops for home consumption and as minor commercial crops for local exchange.

The total area in peanuts in 1948 was 550 hectares; the total production was 876 tons (Maps 49 and 50). There is some small commercial production in Maragogipe and in the Northern Recôncavo; in the former, 6 per cent of the total cropland was in peanuts in 1948, and in the latter, from 2 to 5 per cent. Yields calculated for municípios varied from .3 to 3.5 tons per hectare without discernible pattern. The mean yield was 1.6 tons per hectare, higher than the .97 tons per hectare of Brazil and the .89 tons per hectare of the United States.

BB 245 433 Bananas. The banana is the sole important subsistence crop of the Recôncavo which is of old world origin. Brazil is the world's leading producer of bananas, and the main centers of production are B [245] [433] in Rio de Janeiro, São Paulo, and Minas Gerais. In the Recôncavo, bananas are grown primarily for subsistence and local exchange, but there are a few small commercial growers. Under the existing system BB [489] of transportation, the long distance shipment of so bulky, heavy, perishable, and cheap a product is difficult.

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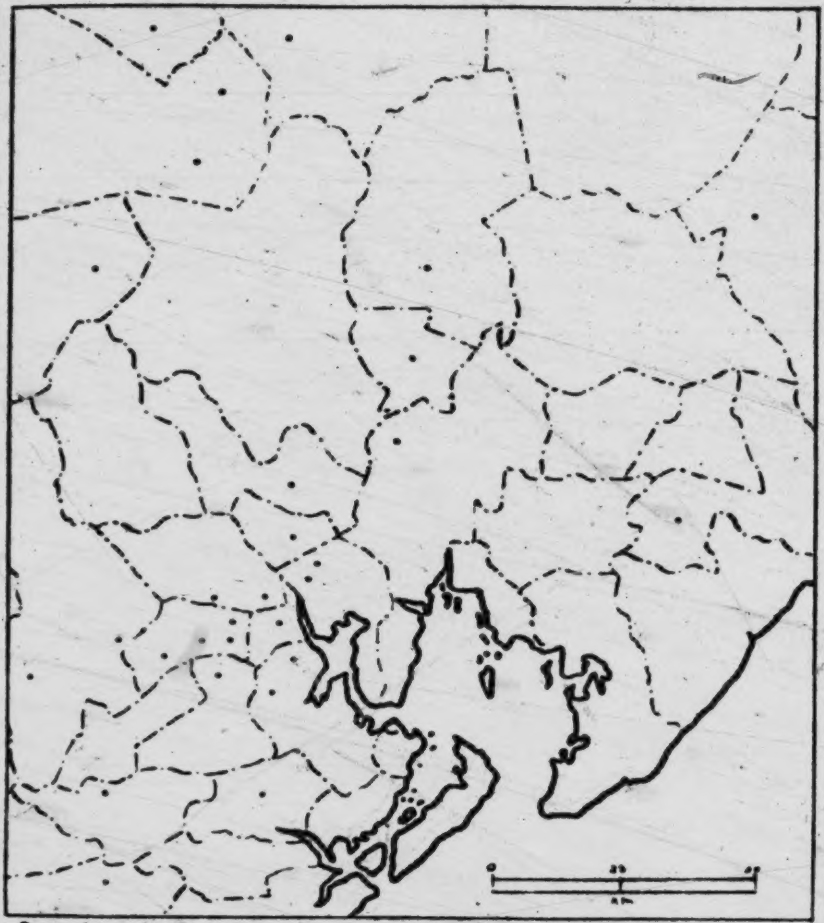

Each dot = 25 hectares

RECONCAVO OF BAHIA

Area in Sweet Potatoes--1948

Source of data: Produção Agrícola: 1948.

MAP 47

*702
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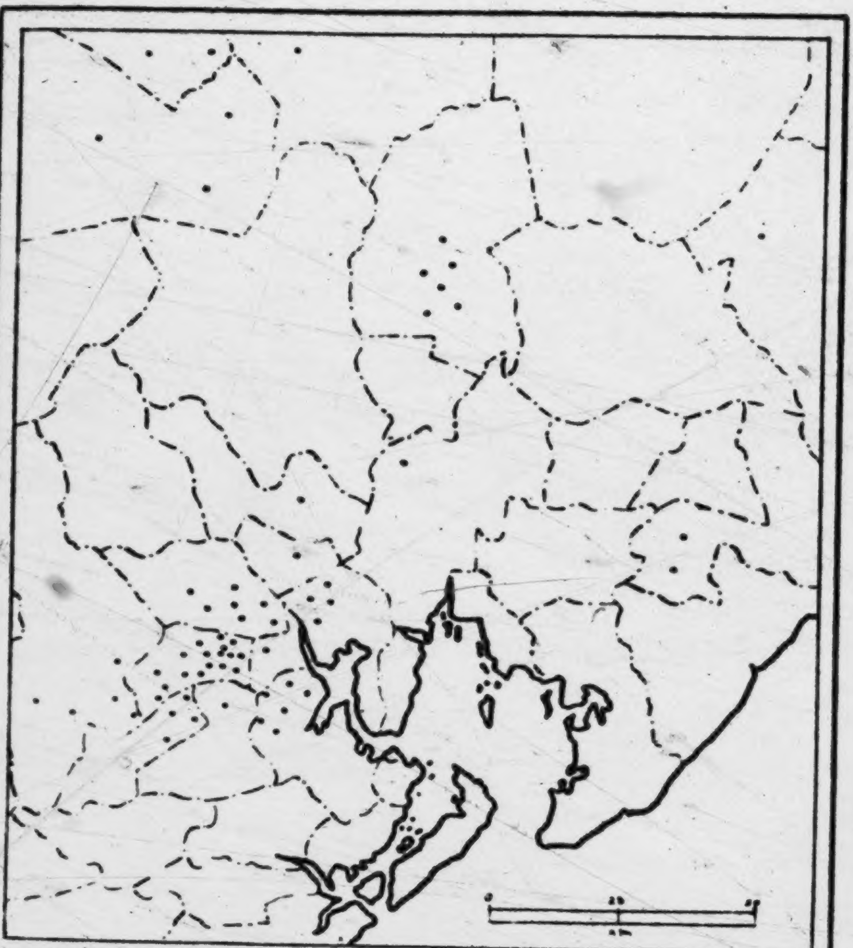

Each dot = 50 metric tons

RECÔNCAVO OF BAHIA

Production of Sweet Potatoes--1948

Source of data: Produção Agrícola: 1948.

MAP 48.

*702
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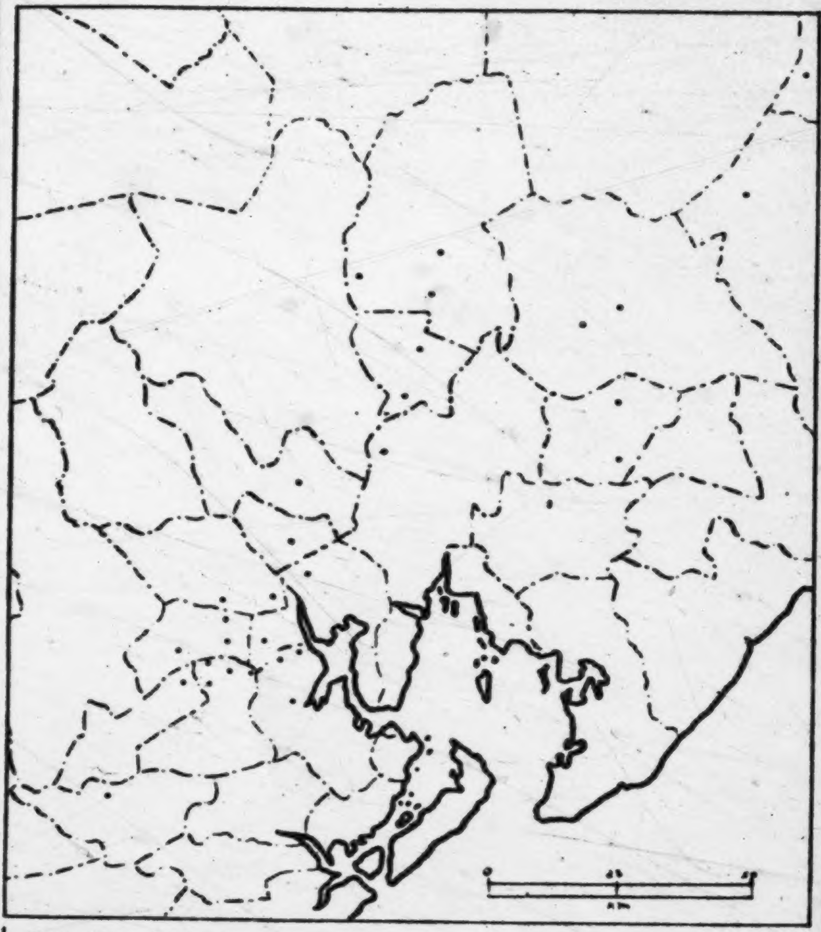

Each dot = 25 hectares

RECÔNCAVO OF BAHIA

Area in Peanuts--1948

Source of data: Produção Agrícola: 1948.

MAP 49

402
244
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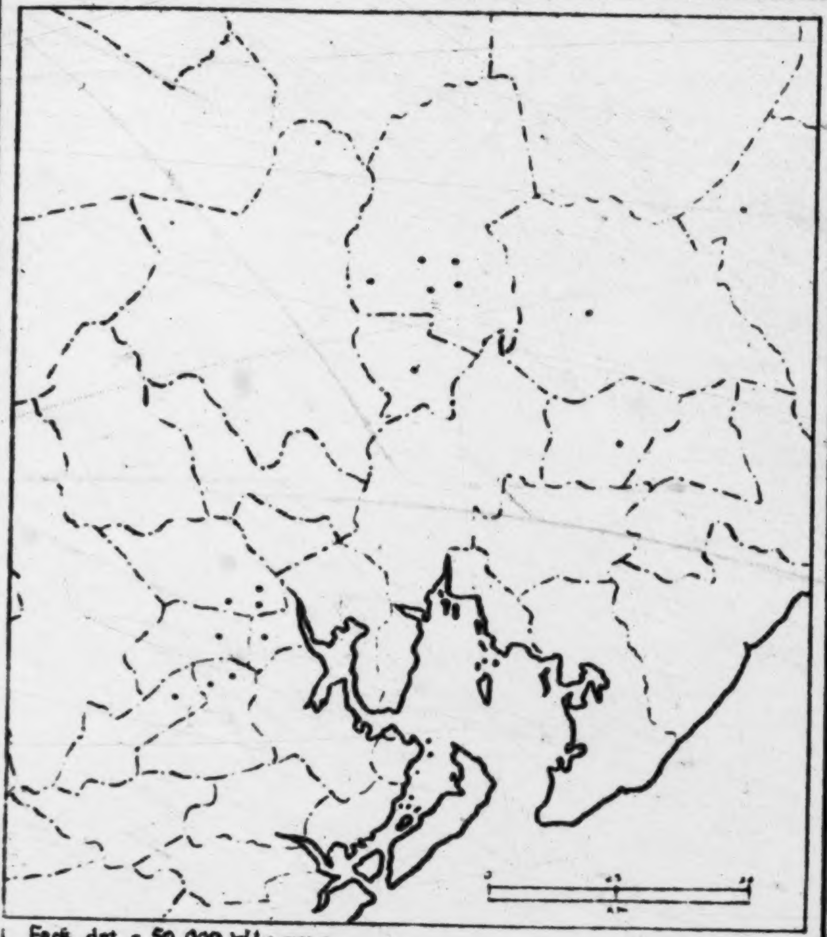
433



Each dot = 50,000 kilograms

RECONCAVO OF BAHIA

Production of Peanuts--1948

Source of data: Produção Agrícola: 1948.

MAP 50

245 The bananas of the Recôncavo include a number of types--large, medium and small eating varieties, and plantains--which are grown in most sections and which may be encountered in village and urban markets in all seasons. Cultivation is a haphazard enterprise in which the reproduction of bananas frequently is accidental rather than deliberate. Since there is so much semi-spontaneous cultivation concealed in gardens and second growth and thus probably not enumerated and since the spacing of the plants is so variable, area data for bananas in the
[311]
[433] Recôncavo have little meaning. The official data for 1948 indicated that there were 1,069 hectares planted in the region, producing an estimated 1,859 bunches.[25]

245
311 Banana plants are seen in all settlements of the Recôncavo, and except in the drier caatinga zone of the Northwestern Recôncavo, scattered over the countryside (Map 51). The chief area of production is in the Southwest, where they are grown almost exclusively for the local market (Map 52). However, there is a concentration of banana production
[505]
[438] around the fringes of Salvador[26] and along the margins of the Bay and the estuary of the Paraguaçu, where sailing craft (saveiros) can conveniently pick up shipments for the large urban market.

245
311
433 In 1948 bananas had their greatest relative importance, as determined by the per cent of the total cropland which they occupied, around and in the city of Salvador, on the island of Itaparica, and around the city of Alagoinhas. The mean yield of bananas in the Recôncavo was 1,730 bunches per hectare, or an estimated 13,840 kilograms per hectare (Map 53)--lower than the 28,900 kilograms per hectare of Brazil, but much higher than the 9,900 kilograms for French West Africa and the 4,400 kilograms for the Philippines.[27]

245
262 It should be emphasized that the banana in Bahia is a relatively cheap and common subsistence food, eaten raw or cooked. This is not to

[TEXT CONTINUED ON PAGE 206]

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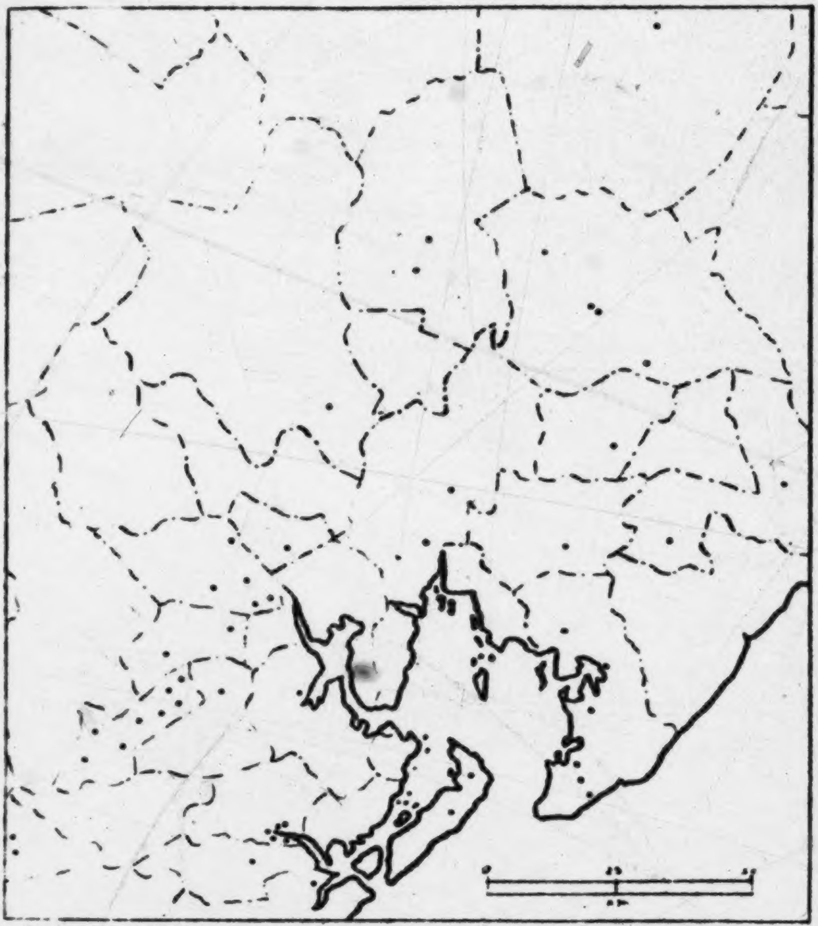


Each dot = 25 hectares

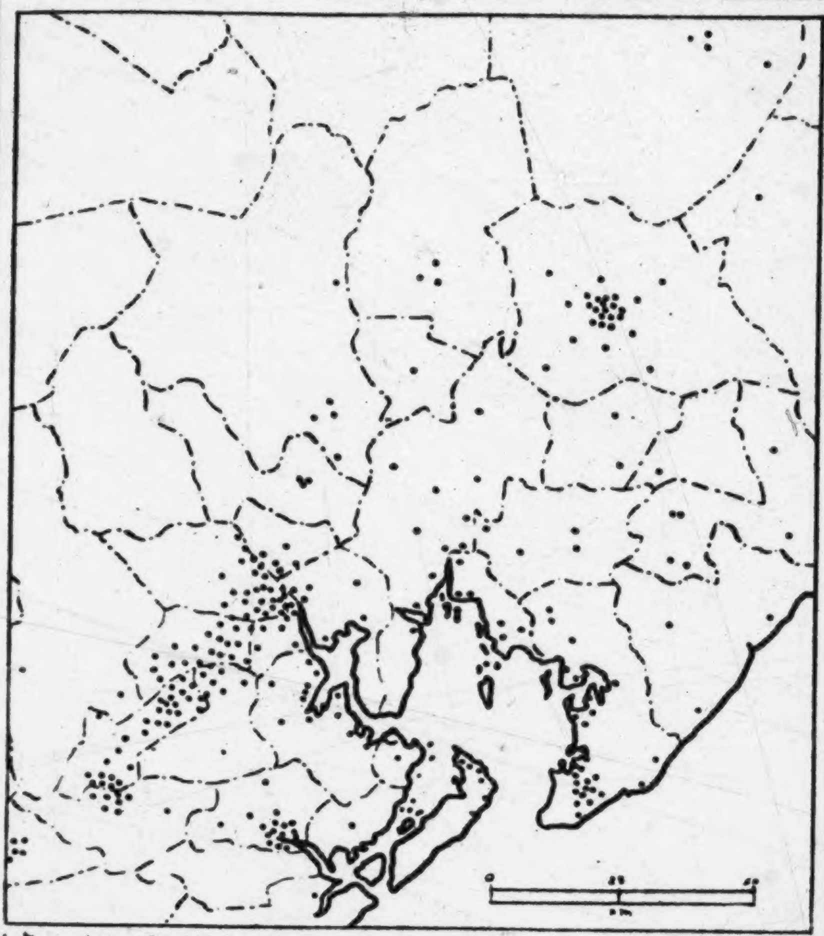
RECÔNCAVO OF BAHIA

Area in Bananas--1948

Source of data: Produção Agrícola: 1948.

MAP 51

*102
245
311
433



Each dot = 10,000 bunches

RECONCAVO OF BAHIA

Production of Bananas--1948

Source data modified from Produção Agrícola: 1948.

MAP 52

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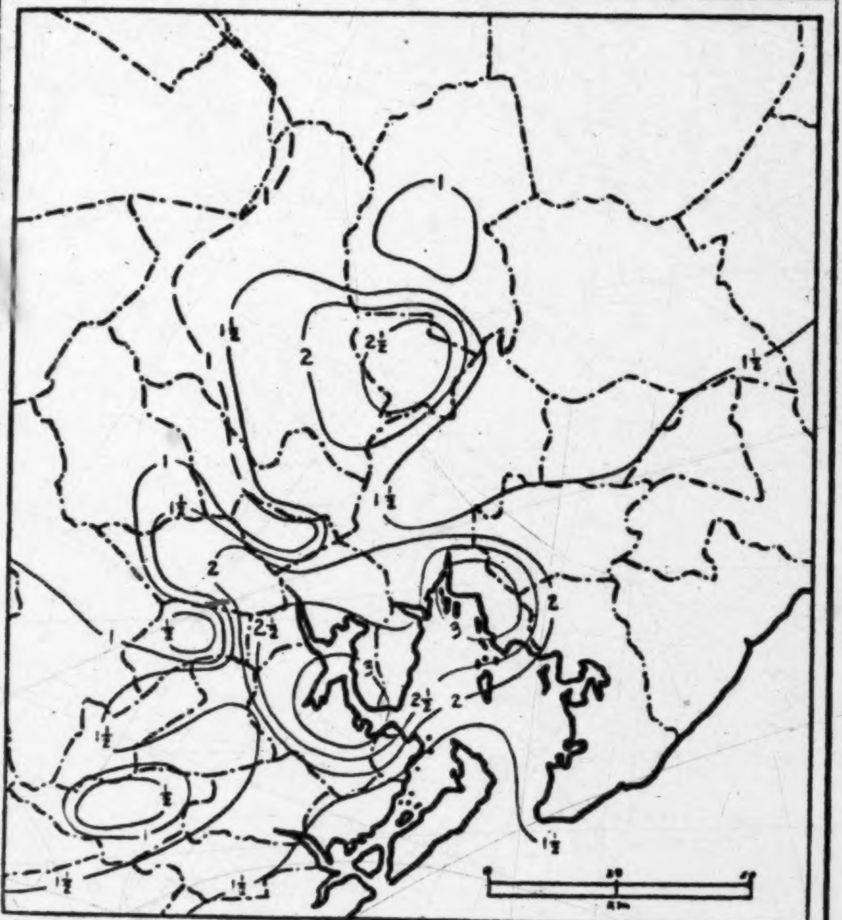
311
433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2
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½
2½
2
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3
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2
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2
1½
½
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1½
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RECÔNCAVO OF BAHIA

Yield of Bananas--1948

Thousands per Hectare

Source of data: Produção Agrícola: 1948.

MAP 53

*102
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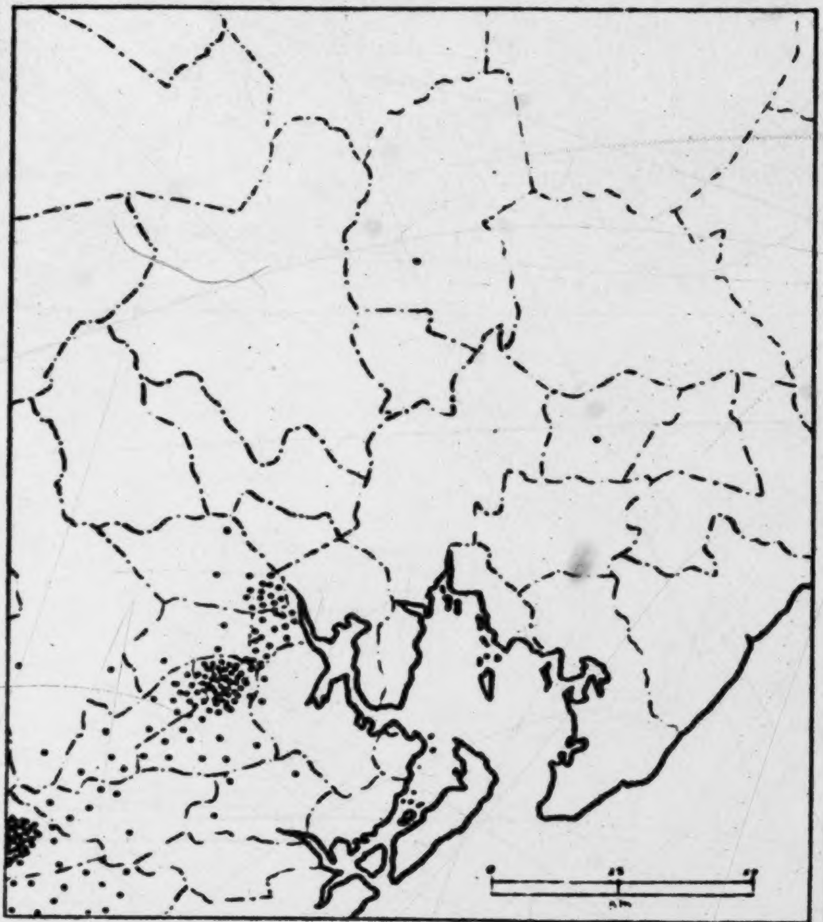
311



Each dot = 25 hectares

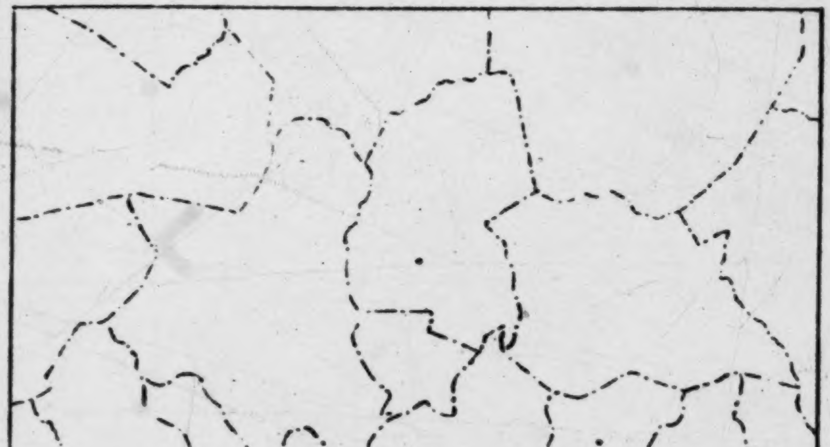
RECÔNCAVO OF BAHIA

Area in Coffee—1948

Source of data: Produção Agrícola: 1948.

MAP 54

*102
245
311
433



Each doc - 5,000 kilograms

RECÔNCAVO OF BAHIA

Production of Coffee--1948

Source of date: Produção Agrícola: 1948.

MAP 55

BB
245
262 say that it is within the reach of all, for there are many who subsist virtually on _farinha de mandioca_ (manioc flour) and a few beans.

B
BB
245
433 _Coffee_. Coffee is not as venerable a crop in Bahia, or in Brazil, as either sugar cane or tobacco; nevertheless, it is one of the traditional major crops. Bahia is by no means an outstanding producer within Brazil, for the main centers of production are in the Central-South—Paraná, São Paulo, Minas Gerais, and Espírito Santo.

BB
245
433 Although Bahia as a whole has an exportable surplus of coffee, the Recôncavo crop is primarily, if not exclusively, for local consumption. Indeed, if the per capita coffee consumption of the Recôncavo is equal to that of the state, a reasonable assumption, the region as a whole produces only about one-sixth or one-seventh of its coffee needs. Under these circumstances, coffee is used, except in a few areas, in the same _município_ in which it is grown.

BB
245
311
433 In 1948 only four _municípios_ in the Recôncavo had 400 hectares or more in coffee or produced over 100,000 kilograms of coffee beans (Maps 54 and 55). The chief coffee _município_ was São Filipe, which led in acreage and in production.[28] For all practical purposes, coffee production is limited to the south side of the Rio Paraguaçu.

Coffee production in Bahia is closely associated with the more humid section of the crystalline zone, and especially the area southwest of the Recôncavo where there are low, rugged mountains and consequently areas of greater elevation and precipitation. This "coffee zone" is extended into the Recôncavo along the rougher, more humid edge of the Crystalline Uplands and the adjacent Intermediate Hills, i.e., in São Filipe and São Felix.

BB
245
311 Only 4 per cent of the cropland of the Recôncavo as a whole was in coffee in 1948, but in São Félix and northern São Filipe the

[TEXT CONTINUED ON PAGE 209]

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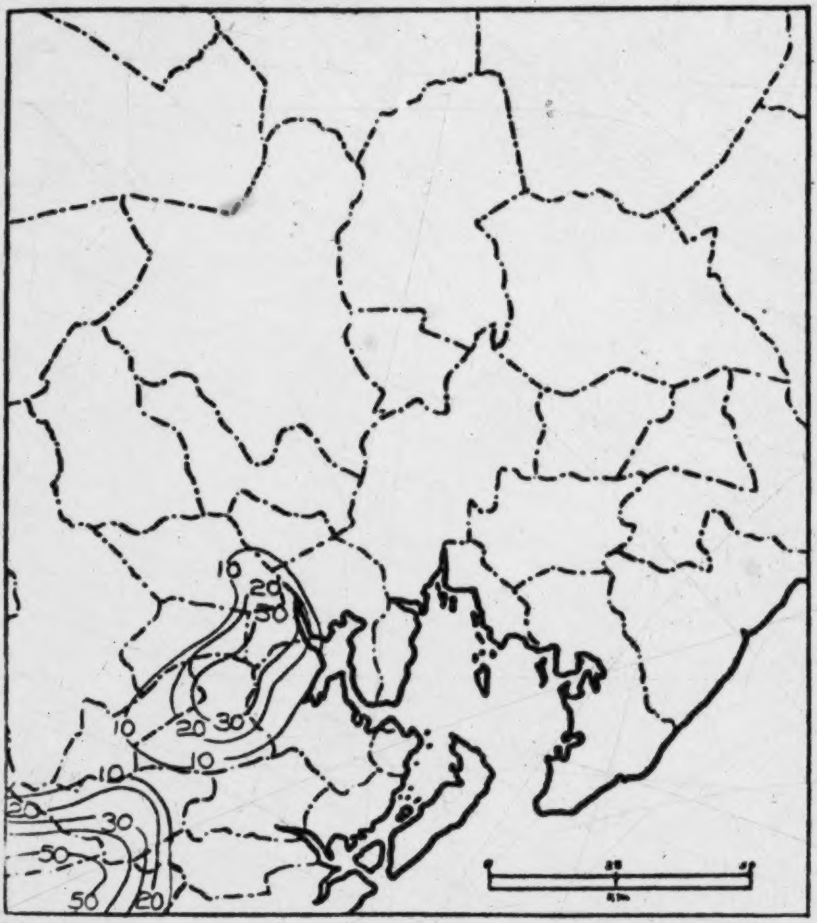
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RECÔNCAVO OF BAHIA

Per cent of Cropland in Coffee--1948

Source of data: Produção Agrícola: 1948.

MAP 56

*102
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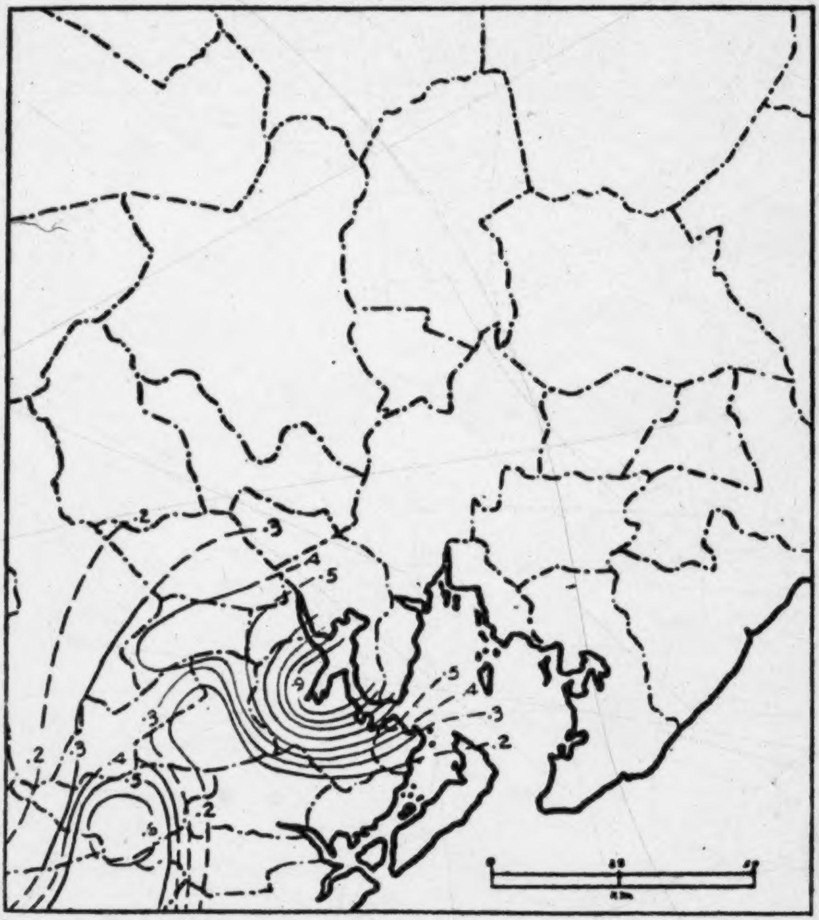
.2
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RECÔNCAVO OF BAHIA

Yield of Coffee--1948

Tons per Hectare

Source of data: Produção Agrícola: 1948.

MAP 57

245 311 small coffee groves occupied as much as one-third of the total cultivated area (Map 56). In São Félix coffee was the second ranking crop in area of cultivation, in São Filipe, the third. The coffee cultivation in these municípios is concentrated along the eastern side of the tobacco-manioc area, on the rough Intermediate Hills. The slope-land [134] [132] soils are relatively fertile; yet there is not too much precipitation for the harvesting and drying of the beans.

Although coffee production in the "coffee zone" beyond the Recôncavo is on a moderately large scale, within the Southwestern Recôncavo coffee is planted in very small, irregular plots. The coffee is shade-grown, usually under a remnant of old mata or under jackfruit and similar trees. Except in São Filipe and São Félix, it is generally cultivated as an auxiliary rather than as a principal crop. The harvest is non-selective, and the entire bush is stripped at one time. 245 311 433 The beans produced under this system are of low quality compared with the selected beans of the Spanish-American highlands, but the people of Bahia claim that their coffee has a special flavor. The mean yield of coffee in the Recôncavo in 1948 was about 300 kilograms per hectare, compared to over 400 kilograms per hectare for Brazil. The main centers of production had yields near the mean of 300 kilograms per hectare, except for São Filipe which produced less than 200 kilograms per hectare (Map 57). Yields, as derived from the official data, were highly variable among the minor producers.

245 Coconut. In a sense the coconut is, like coffee, an alien intrusion into the Recôncavo. Although Bahia is by far the leading producer of coconuts in Brazil—they are called côcos da Bahia—the main centers of production are on the coast north and, to a lesser extent, south of the Recôncavo.

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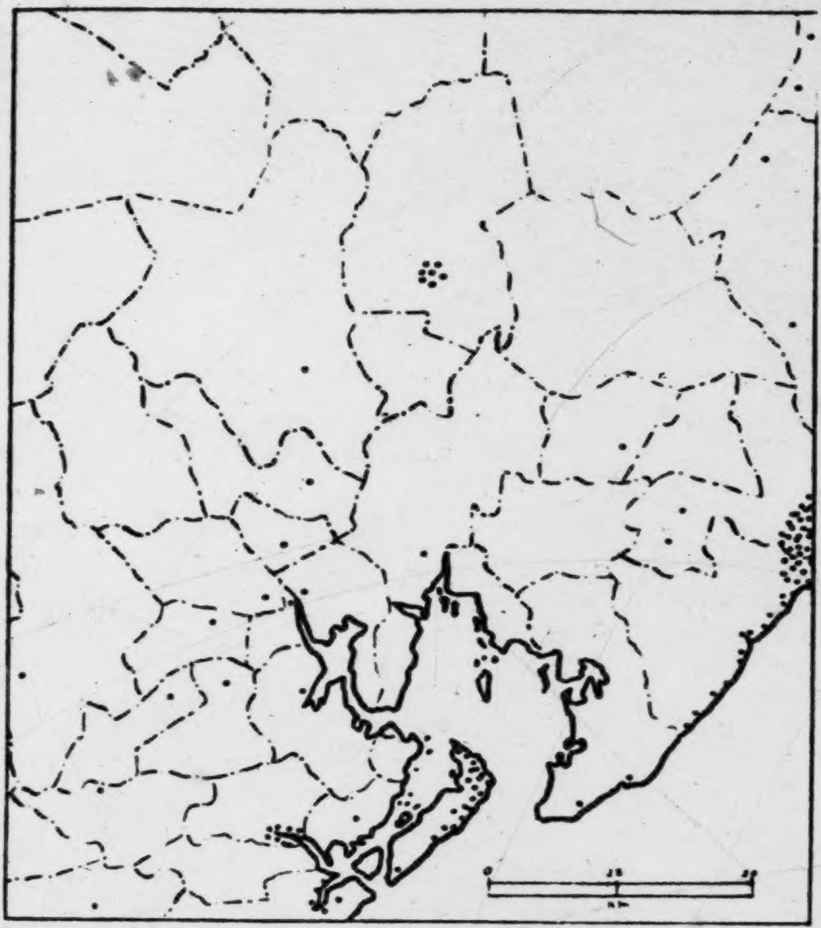


Each dot = 25 hectares

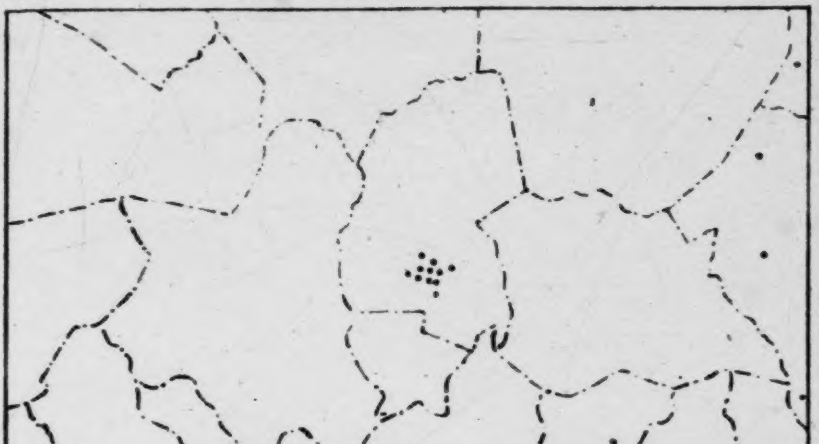
RECÔNCAVO OF BAHIA

Area in Coconuts—1948

Source of data: Produção Agrícola: 1948.

MAP 58

*102
245
311
433



Each dot = 50,000 coconuts

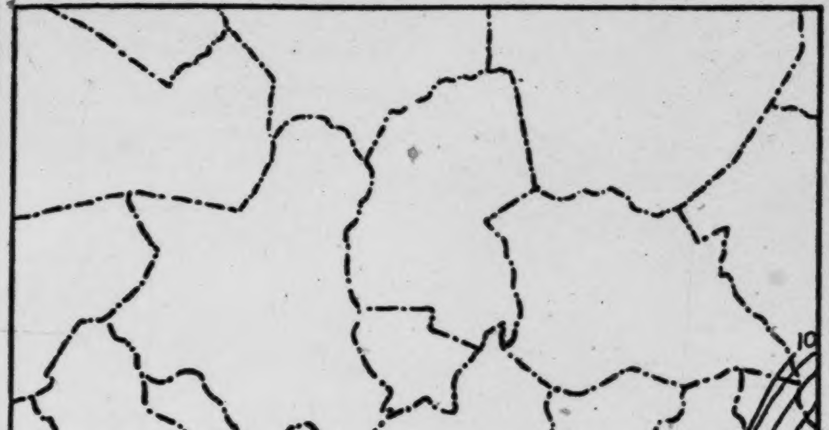
RECONCAVO OF BAHIA

Production of Coconuts--1948

Source of data: Produção Agrícola: 1948.

MAP 59

*102
245
311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50
10
90
10
10
50
30
90
70
30
10
50
90

RECÔNCAVO OF BAHIA

Per cent of Cropland in Coconuts—1948

Source of data: Produção Agrícola: 1948.

MAP 60

245 311 Within the Recôncavo coconut production is important along the
sandy beach line of the island of Itaparica and along the ocean coast
of Salvador, where coconuts are virtually the only agricultural product
[133] (Maps 58, 59, and 60). The inner shores of the Bay, which rise abruptly
[134] with rocky clay slopes, bear very few coconuts, except in a low-lying
sandy zone along the estuary of the Paraguaçu. Coconuts are produced
245 [423] chiefly on large properties which are frequently owned by urban families.
[464] The plantations are operated with hired labor drawn from the coastal
[438] population. When harvested, the coconuts are sold in the urban markets
[258] of Salvador and other cities and towns. Very little of the Recôncavo
[439] production is converted into oil, and little is exported.

Oranges. The navel orange is a Bahian development, a mutation
[433] of the orange brought from Europe. The main centers of Brazilian production, however, are elsewhere in the country, and cultivation of oranges within the Recôncavo is primarily for local consumption.

245 Scattered orange trees are a feature of the rural and urban
311 landscape in many areas. In addition to this generalized cultivation,
which frequently is not shown in the official data, there is commercial
production in the environs of several urban centers—Alagoinhas, Santo
Antônio, and to a lesser extent, Salvador (Maps 61 and 62). The
[489] cidades of Alagoinhas and Santo Antônio are both markets for part of
[443] the local crop; moreover, both are on the railroads leading to Salvador,
which is the chief market for the entire region. In addition to these
three main concentrations, there are numerous orange groves in the
Southwestern Recôncavo which apparently serve both local and regional
markets, though on a small scale. In general the relative area in
orange groves is not great, yet in 1948 they occupied 10 per cent of
the cropland of Alagoinhas.

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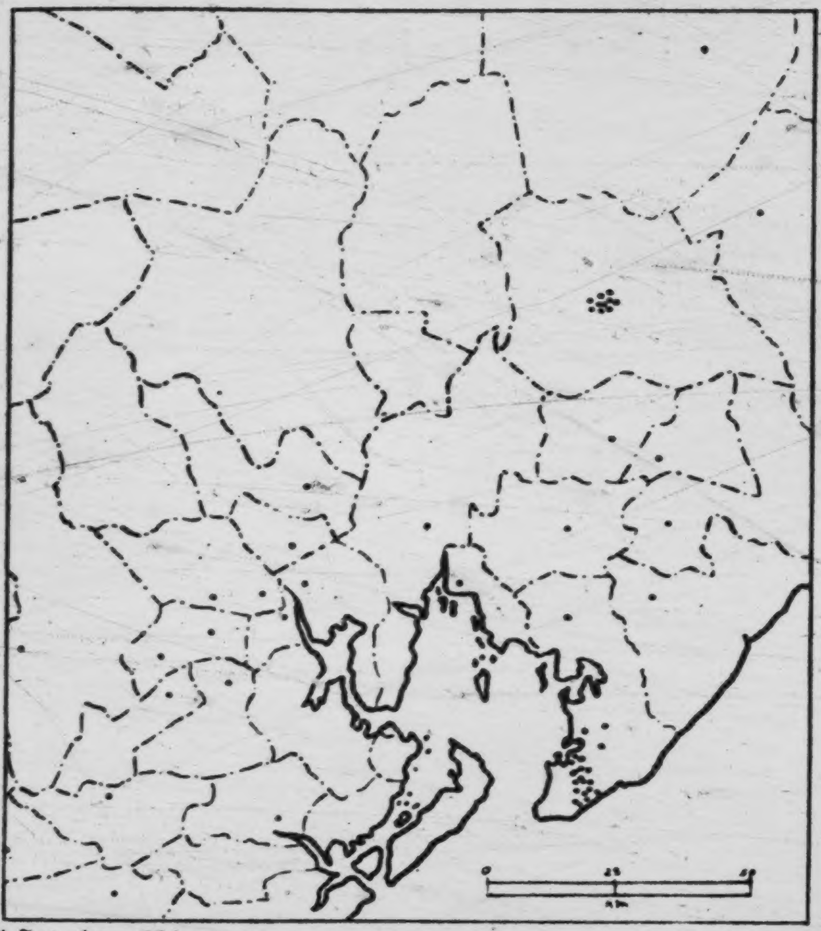


Each dot = 25 hectares

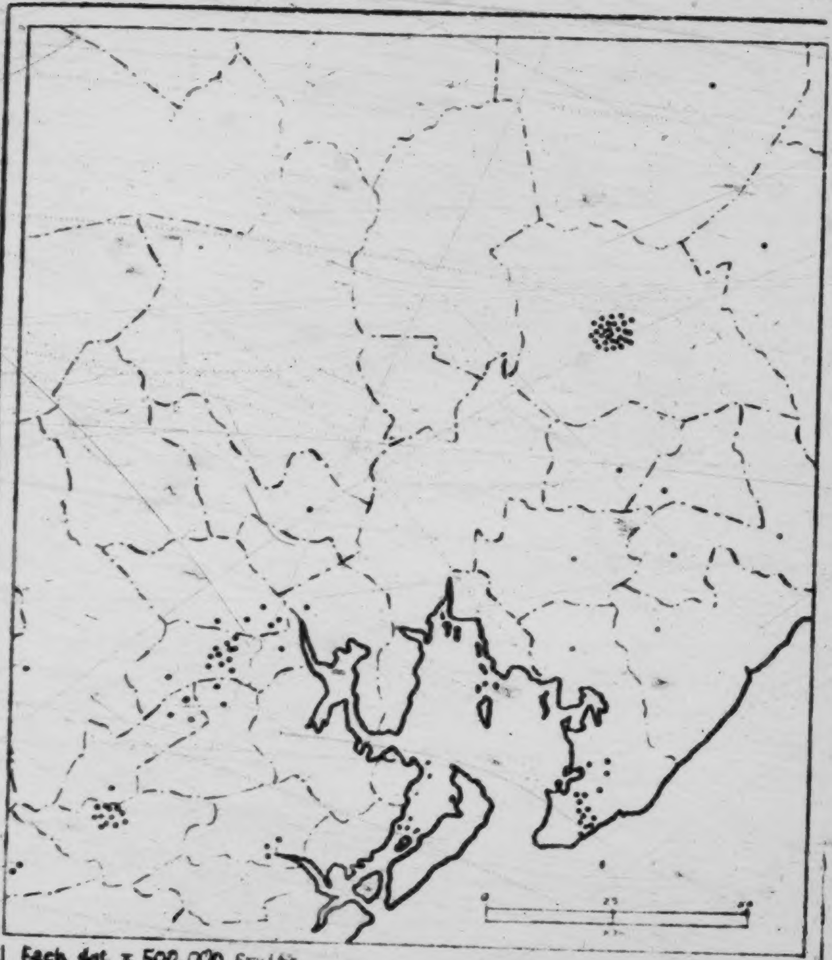
RECÔNCAVO OF BAHIA

Area in Oranges--1948

Source of data: Produção Agrícola: 1948.

MAP 61

102
245
311
433



Each dot = 500,000 fruits

RECÔNCAVO OF BAHIA

Production of Oranges--1948

Source of data: Produção Agricola: 1948.

MAP 62

245 438 [471] Oranges, like coconuts, are usually grown on plantations. The capital investment in tree crops is usually too great for small cultivators. Moreover, as a highly perishable crop, oranges require more or less direct marketing, which is frequently beyond the capacity of the small grower. If oranges were marketed by trickling from the small grower through the hands of merchants, buyers, and the like, as is tobacco, they would be spoiled long before reaching the consumer. The small cultivator can market his handful of oranges only in the local market.

241 433 Supplementary Crops. Although the official data show only a very limited distribution of minor supplementary crops, their cultivation is not confined to those municípios where exceptionally conscientious
[262] statistical agents have made detailed records. The common vegetables--green beans, onions, garlic, and tomatoes--are cultivated in small quantities in all parts of the Recôncavo and are a traditional part of Bahian dishes. Around the cities and towns there is some specialization
[443] in vegetable farming, but there are no major concentrations. The Salvador market is supplied with produce from a broad rural zone which includes
[489] most of the Recôncavo. The produce is brought to the city by donkey, truck, or by sailing boat.

The most important of the supplementary commercial crops is
[134] pineapple, which is produced on the sandy soils of the Northern, and to a lesser extent, Southwestern Recôncavo. There is very scattered production of grapes, cotton, rice, and white potatoes, but there are no important centers of cultivation of these crops.

245 311 Minor Spontaneous Tree Crops. Mangoes are very common within the houseyards of Salvador and throughout the humid Coastal Plain. In

245 311 the peripheral areas of the region they are less common, but a few trees can be seen in almost every settlement. The cashew is more strictly confined to the littoral and especially to the sandy coastal zones behind the palm-laden beach line. Jackfruit and breadfruit are especially common in the eastern Crystalline Uplands. Scattered along roads and around houses, they provide shade for the yard or for coffee and an occasional fruit for sale in the local market. The African oil palm is encountered occasionally in most municípios of the Recôncavo, generally growing out of the wet valley floors. There are many oil palms on the island of Itaparica, but the only major area of commercial production in Bahia is on the coast south of the Recôncavo. [258] [438] The oil is prepared by boiling the seed, and the surplus oil is sold in small quantities on the local market.

241 311 Annual and Perennial Crops. Six of the major crops of the Recôncavo are cultivated as annuals--manioc, corn, beans, peanuts, sweet potatoes, and tobacco.[29] The major perennials are bananas, sugar cane, coffee, oranges, and coconuts. Over three-fourths of the cropland of the Recôncavo was in annuals in 1948 and about 22 per cent in perennials--including both tree and field crops. In the Recôncavo there is a very close connection between crop periodicity and land systems. The annual crops are produced almost exclusively under a system of land rotation, while the perennials are grown under a system of permanent cultivation. The zones of animals are generally mixed-crop zones, while the perennials are usually monocultural.

The main concentrations of annuals are on the uplands of the Northern, Northwestern, and Southwestern Recôncavo--the domain of manioc, tobacco, corn, and beans (Map 63). Perennials dominate the Intermediate Hills and the coastal lowlands--coconut palms on the beaches, sugar

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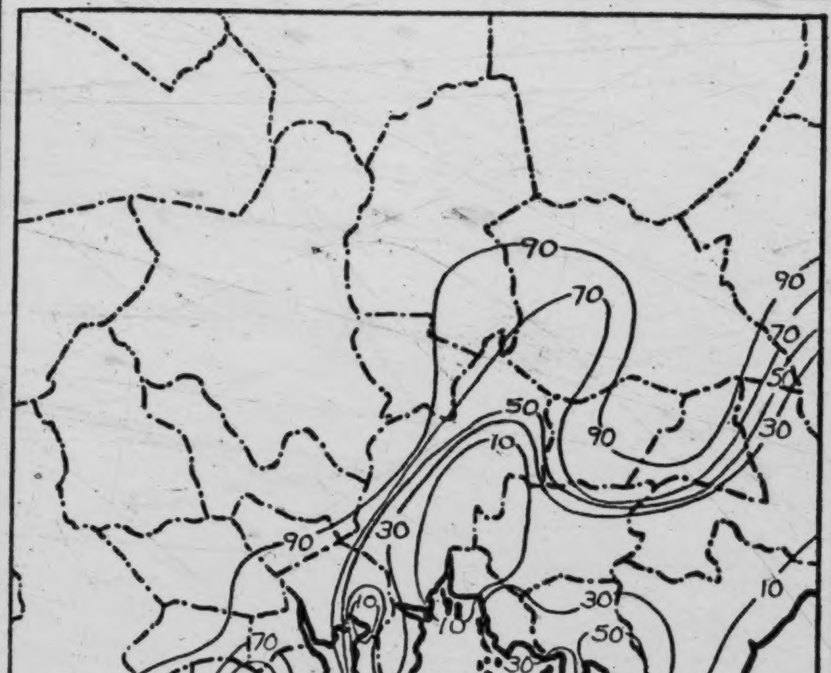
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RECONCAVO OF BAHIA

Per cent of Cropland in Annual Cultivation—1948

MAP 63

241 311 cane in the pockets of Coastal Plain, and coffee and sugar cane in eastern and southern São Filipe. Annuals, chiefly manioc, intrude into the lowlands and hills in two areas: west of the Bay, from Maragogipe to Nazaré; and east of the Bay, in the município of Salvador.

General Distribution of Cropland. The total cropland of the Recôncavo in 1948, based upon the sum of the areas of the individual crops, was about 80,000 hectares--6.4 per cent of the land surface of the region. This proportion compares favorably with the one per cent of the state of Bahia and the two per cent of Brazil which is cultivated. However, a comparison with areas of the same general character in the Northeast of Brazil is more appropriate and more unfavorable; in 1948 both Paraíba and Alagoas had ten per cent of their areas under cultivation in principal crops.[30]

249 311 The most intensive center of cultivation in the Recôncavo is the area of sugar cane production north of the Bay. If the land which is in fallow one year out of every five is added to the area of the cane fields, about 75 per cent of the total land surface of the area was included in the closed circle of cultivation and fallow in 1948. The smaller area of sugar cane cultivation at the head of the Bacia do Iguape had a similar, though less intensive, concentration of cultivated land.

249 244 311 In the Southwestern Recôncavo as much as one half of the total area was in crops in 1948. Most of this land, as has been seen, was in tobacco or manioc. A smaller nucleus of intensive cultivation north of the Rio Paraguaçu centered on the município of São Gonçalo, was also an area of the cultivation of tobacco and manioc. The rest of the northern part of the Recôncavo in which these two crops were

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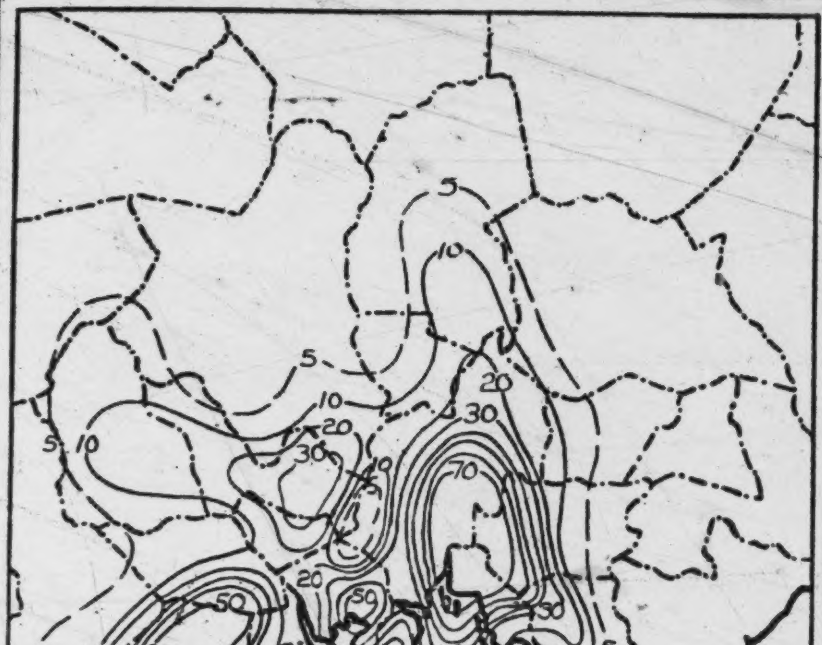
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RECÔNCAVO OF BAHIA

Per cent of the Total Land Area in Cropland--1948

MAP 64

249 244 311 important had less intensive cultivation than the two principal centers mentioned above.

241 311 Most of the remaining crops of the Recôncavo were either minor subsistence crops of general distribution, not of themselves accounting for any strong concentration of cropland, or were major crops produced in small separated centers of intensive cultivation. The Northwestern Recôncavo corn and bean areas, the coconut plantations of the beach line, the Southwestern Recôncavo sugar cane and coffee areas, and the suburban rings of orange production were zones where the mean intensity of cropland was low or, at best, modest.

There were two zones of very low intensity of cropland which have not been discussed previously because they did not have significant concentrations of individual crops. [137] [231] The belt of Intermediate Hills around the Central Recôncavo sugar cane area is largely forested, the scene of very scattered cultivation, livestock enterprises, and extractive industries. This belt was used, as will be seen, to provide fuel and to maintain a livestock reserve for the adjoining sugar cane area. The forested belt between the beach line and the inland areas of sugar cane and tobacco cultivation were used primarily for extensive systems of cultivation and for the small scale production of livestock. Only around the perimeter of Salvador was this forested belt intensively used, for in this area there were orange groves, manioc gardens, and a few very small truck farms.

241 311 178 [161] [434] Expansion of Cropland. There can be little question but that the Recôncavo as a whole was an area of expanding cropland in the 1940's.[3] In no other way could the increased food necessary for the growing population be supplied, for there were not then nor are there now external sources for large quantities of staples, excepting only livestock. There

241 are many local signs of the increase in cultivation—expanding rural
311 settlement, overcrowded market facilities, and stories of the "old days"
178 when life was more leisurely and the land problem less severe. Two
[361] areas of the Recôncavo are in great contrast as far as the trend of land use is concerned—the Central Recôncavo on the one hand and the
249 outer Recôncavo, especially the Southwest, on the other. As a result of
311 the stabilization of the sugar industry by the Instituto do Açúcar e do
178 Álcool and, undoubtedly, of the high fixed costs of the sugar industry,
[654] the area under cultivation in the Central Recôncavo has remained rela-
[656] tively constant. Indeed, since large-scale speculation in the cultivation of cane is no longer feasible, as a result of government control, it is possible that marginal lands have been withdrawn from cultivation or have been converted to other uses. However, the evidence of the present land use pattern, at least in the area north of the Bay, is against this hypothesis--there are no signs of abandoned cane fields and no extensive areas with any form of land use except those associated with the sugar industry. There are indications of the abandonment of cultivation near the lesser sugar cane area north of the Bacia do Iguape, but the state of the abandoned sugar mills suggest that the decline in cultivation took place before the last decade. In general, then, the area in cane probably was relatively stable during the 1940's and the 1950's, at least to 1953.

249 The situation in the areas of the cultivation of tobacco and
244 manioc is more complicated, in part because the economies of these crops
311 are not stabilized. The area in tobacco undoubtedly has fluctuated over
178 a wide range from year to year, although the area in manioc probably has tended to change more steadily, since it is a basic food crop. There seems to be no question but that during the 1940's the area in

249 244 311 178 tobacco and manioc increased in the zones of intensive production of both crops. Particularly in the Southwestern Recôncavo does the expansion of settlement, the present critical intensity of land use, the florescence of tobacco cultivation during the early 1940's, soil exhaustion as evidenced by the declining yields, and the testimony of the people of the people of the area attest to the increase during these years. Detailed field investigation in Cruz das Almas, in the heart of the Southwestern Recôncavo, indicated that if the intensity of cultivation shown by the 1948 figure is correct, then the cropland has declined in the years since. In 1948, according to the data, one-half of the total area of the *município* was cultivated; in 1953 the total land in crops can scarcely have been more than one quarter of the total area, and there were several signs of decline. Although there was no mature second growth, there was a good deal of *capoêira de caatinga* and *capoêira de mata* (second growth) which was about one to three meters high, that is, from about two to six years old. Cruz das Almas seems to be the extreme case of a *município* which went through a period of rapid growth and precipitous decline in these years, but the same processes undoubtedly have taken place in many of the other *municípios* where tobacco was important. Probably none of these areas have returned to the 1940 level, because of the concomitant increase in the population and the fall in the productivity of the land in the years since.

241 311 178 There have apparently been major expansions of the cropland of two areas which border on the Recôncavo. Serrinha is known as a *município* of recent agricultural expansion.[32] The growth of the *cidade* of Serrinha in the last decade is a clear expression of greater agricultural production, although the new cropland is not in the vicinity of the city. Apparently the main expansion was around a group of low *serras* and

241 311. 178 shallow lakes west of the cidade, along the border of Conceição do Coite, where intensive production of corn and beans on newly settled land could be observed in 1953.

The agricultural expansion in Santo Antônio and in Nazaré was more notable. Both of these municípios lie in a zone of continuing agricultural development which is contiguous with the Recôncavo and which shows signs of becoming an integral part of the region. If the criterion originally used to delimit the Recôncavo and define the area of intensive field investigation—over 20 per cent of the total area in agricultural use—were to be applied to the 1948 distribution of cropland, then Santo Antônio, though not Nazaré, would lie within the region. The current agricultural development of Santo Antônio, and to a lesser extent of Nazaré, is making these municípios progressively more like the Recôncavo.[33] The pattern of the production of tobacco and manioc in Santo Antônio is essentially the same as in the Southwestern Recôncavo. However, these two areas are still primarily oriented toward a zone along the Nazaré railroad, in which coffee and sugar cane, as well as tobacco and manioc, are important crops. For the moment, Nazaré and Santo Antônio are excluded from the Recôncavo, but with the explicit recognition of the possibility of new orientation.

Footnotes - Chapter V

000 [1] The outstanding example of the ribbon development of cropland is along the highway which traverses the Crystalline Uplands from Santo Antônio to Feira de Santana. Each of the *cidades* along this road—Conceição do Almeida, Cruz das Almas, Muritiba, São Félix, Cachoeira, Conceição da Feira, and São Gonçalo—is the center of an intensively cultivated zone and is connected with the others by a belt of cropland running along the highway. In part this ribbon development is the result [133] of restrictive factors; in Conceição da Feira and São Gonçalo the intensively cultivated strip runs between the rough Intermediate Hills on the [132] east and the dry *caatinga* on the west. The same negative relationships are characteristic of the Southwestern Recôncavo, but the intermediate zone of acceptable terrain and climate is here broader than in the north.

[2] *Producão Agrícola: 1948.*

[3] Ministério da Agricultura, Serviço de Estatística da Produção, "População Pecuária, Em 31/12/1948."

[4] For a map of manioc production in Latin America, see: Office of Foreign Agricultural Relations, Map of "Manioc Estimated Production Latin America," *Agriculture in the Americas*, Vol. III, Nos. 8-9 (August-September, 1947), p. 120.

[128] [5] A more detailed discussion of processing of *farinha de mandioca* is given in Chapter X.

[6] Ruth Matos Almeida Simões, "Comentário do Mapa da Produção de Mandioca no Estado da Bahia," *Boletim Geográfico*, Vol. XI, No. 112. (January-February, 1953) pp. 84-86.

[7] It is likely that the official figures underestimate the area and production of manioc. A considerable part of the crop is grown on small plots remote from political centers and well-traveled routes and may thus have escaped the enumerator. Moreover, its cultivation is so commonplace and its exchange often so local and in such small quantities that even tax-conscious local government officials may easily be unaware [127] of small and scattered plots which in sum may bulk fairly large. Some of the official data which have been used in the analysis of manioc cultivation, production, and value have been modified. For a discussion of these modifications and for maps based upon the unmodified data, see Appendix D.

[8] Conceição do Almeida, Cruz das Almas, and São Filipe.

[9] This popular and official view underestimates the importance of [128] manioc production in its own right. The commercial element in manioc production is discussed in Chapter IX.

[128] [10] The system of manioc cultivation will be discussed in conjunction with the tobacco-manioc system in Chapter VI.

[245] [11] The "coffee zone" of Bahia includes a number of *municípios*, from Laje (adjoining Santo Antônio) to Jequié along the *Estrada de Ferro Nazaré*.

000

[12] Centered in the *município* of Valença.

[127] [13] In the comparison of yields here and in the following discussion, the data for Brazil and for the other countries or regions have been taken from the 1948-1950 yields as given in: Food and Agriculture Organization of the United Nations, *Yearbook of Food and Agricultural Statistics 1953*, Vol. VII, Part I (Rome, Italy: Food and Agriculture Organization of the United Nations, 1954), pp. 1-334.

[128] [14] For a more detailed discussion of tobacco grades and zones, see Appendix E.

[15] Because of the great variations in tobacco area from year to year, the data for a single season are a less reliable guide to characteristic distribution for tobacco than for most other crops of the Recôncavo. The modifications which have been made in the official data are given in Appendix D.

[16] See Appendix E.

[17] The great local variation in yield in these zones is probably due to the concentration of the small quantity of tobacco in areas of highly diverse soils and irregular precipitation.

[18] However, this comparison should be considered with regard for the harvesting practices mentioned above.

[19] In ten of the thirteen years from 1939 to 1951, the area planted in tobacco in the Recôncavo rose and fell in accordance with the price of the preceding year. Data from: Instituto Bahiano do Fumo, *Contribuição do Instituto Bahiano do Fumo*, A Report Prepared for the First National Tobacco Congress (Salvador, Bahia: Instituto Bahiano do Fumo, 1952), pp. 1-16. [127]

[127] [20] The sources used in the discussion of tobacco production for 1931 to 1951, in this and the following paragraphs, were: (1) Instituto Bahiano do Fumo, *Contribuição do Instituto Bahiano do Fumo*, pp. 1-16; and (2) Antonio Nonato Marques, *Geografia do Fumo na Bahia* (Salvador, Bahia: Centro de Estudos Ruralistas Nonato Marques [1952]), pp. 1-85.

[128] [21] For a more detailed discussion of this aspect of tobacco-manioc cultivation, see the discussion of the tobacco-manioc system in Chapter VI.

[127] [22] The common practice of corn-bean interculture raises a problem in the interpretation of the statistical data which is discussed in Appendix D, as are modifications in the official data for corn.

[241] [35] [23] The typical American or European garden, a permanent area for the production of household vegetables, fruits, and herbs, is practically unknown in the Recôncavo. Garden crops are grown at odd places within the cultivated areas or scattered around the houses, except for a few small, fenced plots for food production within the sugar cane zone. In all these gardens there is a very limited variety of crops.

[128] [24] The system of sugar cane cultivation will be discussed in Chapter VI.

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[127] [25] The official data for banana production have been adjusted, as is shown in Appendix D. According to: Immigration and Colonization Council, Modern Brazil (Rio de Janeiro: Immigration and Colonization Council, 1949), p. 119, a bunch of Brazilian bananas contains an average of 60 fruits and weighs 8 kilograms.

[351] [565] [26] Indeed, bananas are common plants within the city. Each upper class house, perched on top of the ridge, has its banana grove on the declivity behind. In the valley bottoms, banana plants surround the adobe houses of the lower class.

[27] These yields are offered for the purpose of general comparison. The diversity of conversion figures used in estimating the weight of bananas does not allow for precise comparison.

[127] [28] The official data for area in coffee in São Filipe apparently is a three-fold exaggeration, unless the yields are incredibly low. The production data are more reasonable.

[244] [29] Although manioc is not an annual plant, it is usually harvested in the Recôncavo before it is a year old. It seems more useful to classify these plants as annuals or perennials by their respective systems of cultivation rather than by their botanical characteristics.

[30] This comparison is somewhat unfair to Paraíba and Alagoas, since these states both include extensive non-agricultural areas, while the Recôncavo is an area specifically selected on the basis of intensity of agricultural land use.

[128] [31] For a comparison of 1940 and 1948 cultivated and agricultural area, see Appendix F.

[127] [249] [32] The cropland figure for Serrinha, derived from the 1948 data, is 25 per cent larger than the cultivated area given in the 1940 census. A complicating and contradictory line of evidence is supplied by the data on tobacco production, which is usually a good index of crop cultivation changes in this area. The tobacco production of Serrinha showed a decided decline from 1940 to 1948. It can only be assumed, in the light of the obvious growth of the cidade, that there was some expansion, but in food crops rather than in tobacco.

[33] The region which includes these two municípios follows the railroad from Nazaré to Jequié—the Estrada de Ferro Nazaré—and includes all the municípios touched by the line. In general this is thought of as a "coffee zone," but in its eastern section other crops, notably sugar cane and tobacco, displace coffee as the chief commercial products. Where this region approaches the Recôncavo most closely, in northern Santo Antônio, it is difficult to draw the boundary between the two. However, in 1948, even in 1953, the basic economic associations of Santo Antônio were with the railroad zone.

CHAPTER VI

CROP REGIONS AND SYSTEMS

128 241 The discussion in the preceding sections has emphasized the analysis of the character and distribution of individual crops. As has been suggested, the Recôncavo has several specific crop associations, particularly manioc with tobacco and corn with beans, and several monocultural systems--sugar cane, coconuts, and coffee. The discussion which follows will deal with the crop associations and monocultures as areal and as functional groupings--a first step in the synthetic development of the sub-regional and regional patterns of agriculture in the Recôncavo. Since the *município* tends to be a highly integrated micro-region with a distinctive pattern of crops and cropland, the first level of generalization is this politically delimited local area. The summation of the crop pattern of the local area leads to the determination of the region in which crops are cultivated in isolation or in co-existence and in which co-existent crops are cultivated in interdependent crop systems.

128 241 311 *Crop Ranks*. In order to determine the areal importance of the principal crops in relation to each other, the crops of the several *municípios* of the Recôncavo and the adjoining regions were ranked in accordance with the amount of the cropland area which they occupied. The accompanying series of maps, based upon these rankings, reveal that more cropland was devoted to manioc (Map 65) than any other crop
241/311 in seven *municípios*. Tobacco occupied this position in six *municípios*, sugar cane in four *municípios*, corn in three, and coconuts in one. The relative area devoted to these five most cultivated crops varied from

[TEXT CONTINUED ON PAGE 230]

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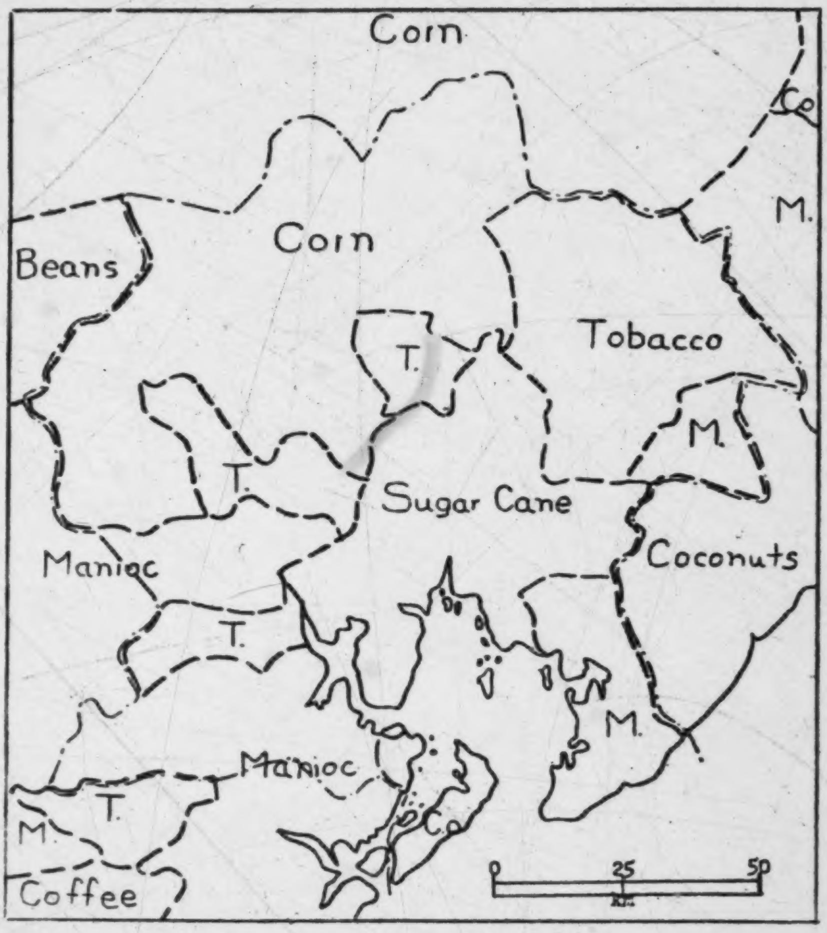
Corn
Co
M.
Corn
Beans
Tobacco
T.
T.
Sugar Cane
M.
Manioc
Coconuts
T.
M.
Manioc
T.
M.
Co.
Coffee
0
25
50
Km.

RECONCAVO OF BAHIA

Crops Ranking First in Area of Cultivation in 1948

M - Manioc
T - Tobacco
Co- Coconuts

MAP 65

241 96 per cent of the total cropland planted to sugar cane in São Sebastião
311 to 33 per cent of the total cropland occupied by manioc in São Filipe.

At least one-third of the cropland of every *município* of the Recôncavo and the adjoining areas was planted to a single crop, and in twelve *municípios* of the region, over half the total cropland was occupied by one crop. The leading crop of the Eastern, Northern, and Northwestern Recôncavo was either corn or tobacco, that of the Southwestern Recôncavo, either manioc or tobacco. Sugar cane ranked above other crops in the Central Recôncavo. In the Southern Recôncavo either manioc or coconuts occupied the greatest area of cropland.

The percentage of the cultivated land in the crop ranking second in area varied greatly from *município* to *município* (Map 66). In São Sebastião and Pojuca, in the Eastern Recôncavo, the crop which held second position occupied only 2 per cent and 4 per cent of the cropland, respectively. In Cruz das Almas the second crop in area occupied 42 per cent of the cultivated land. Manioc was the second crop in area in all *municípios* where tobacco was first except tiny São Félix. In the Northwestern Recôncavo, when corn was the first crop, beans or tobacco occupied the second position.

The pattern of the succeeding ranks shows the effect of specialization in cultivation: in five *municípios* of the Recôncavo and six *municípios* in the adjoining areas, the first two crops occupied 90 per cent or more of the cropland. Only nine Recôncavo and three adjoining *municípios* had a sixth ranking crop which occupied as much as 1 per cent of the total cultivated area, and in no *município* did the sixth crop occupy more than 4 per cent of the total cropland. The patterns of crops occupying third, fourth, fifth, and sixth ranks in area are shown on Maps 67, 68, 69, and 70.

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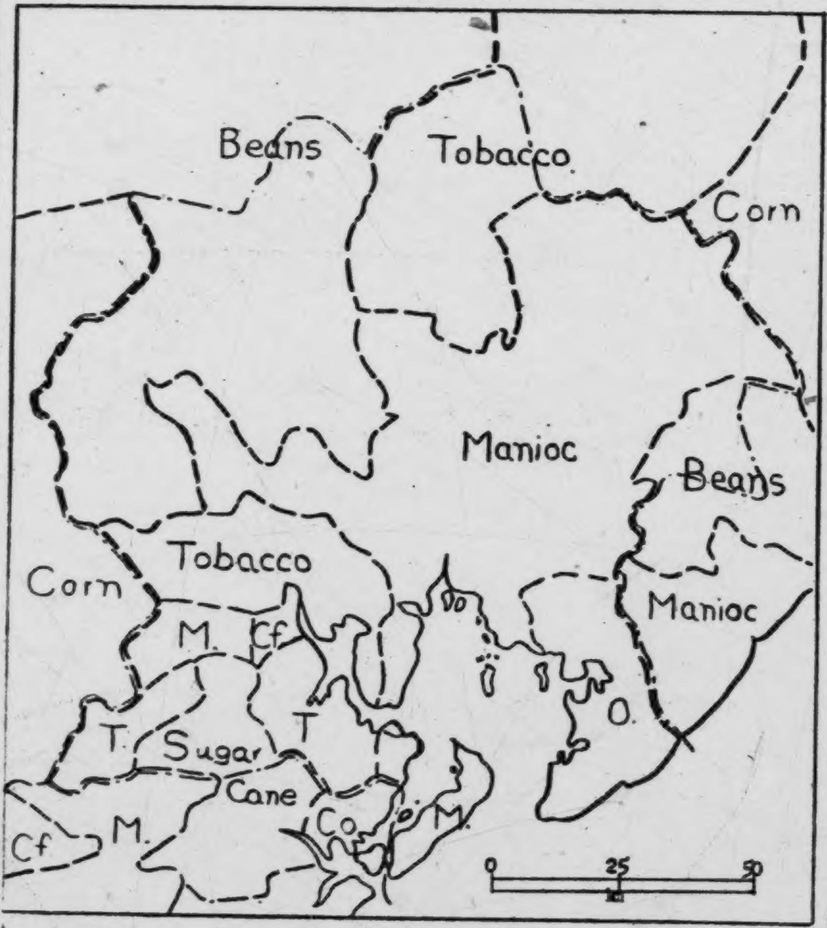
Beans
Tobacco
Corn
Manioc
Beans
Tobacco
Corn
Manioc
M.
Cf
T.
Sugar
T
Cane
O.
Cf
M.
Co.
M.
0
25
50
km

RECÔNCAVO OF BAHIA

Crops Ranking Second in Area of Cultivation in 1948

M - Manioc
T - Tobacco
Co- Coconuts
Cf- Coffee
O - Oranges

MAP 66

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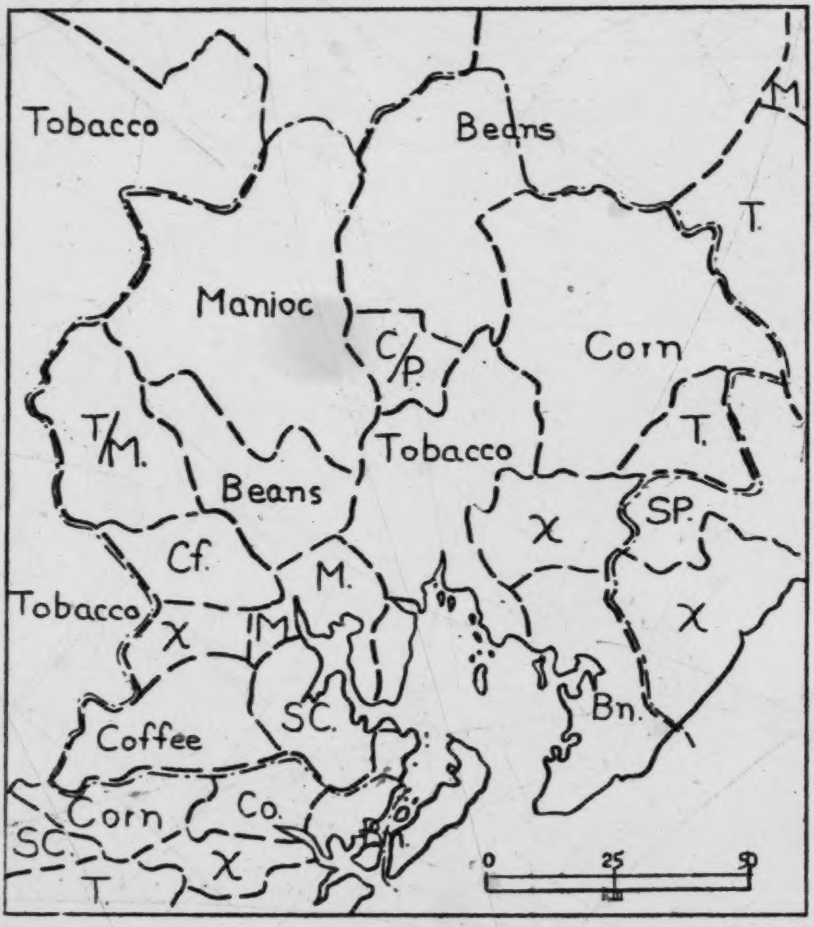
Tobacco
Beans
M
T.
Manioc
C/P.
Corn
T/M.
Beans
Tobacco
T.
SP.
Cf.
M.
X
X
Tobacco
X
M
SC.
Bn.
Coffee
Corn
Co.
SC.
X
T.
0
25
50
KM

RECÔNCAVO OF BAHIA

Crops Ranking Third in Area of Cultivation in 1948

M - Manioc	SP- Sweet Potatoes
T - Tobacco	C - Corn
Co- Coconuts	A/B-Two crops with same rank
Cf- Coffee	x - No crop of this rank
SC- Sugar Cane	with over 1 o/o of cropland

MAP 67

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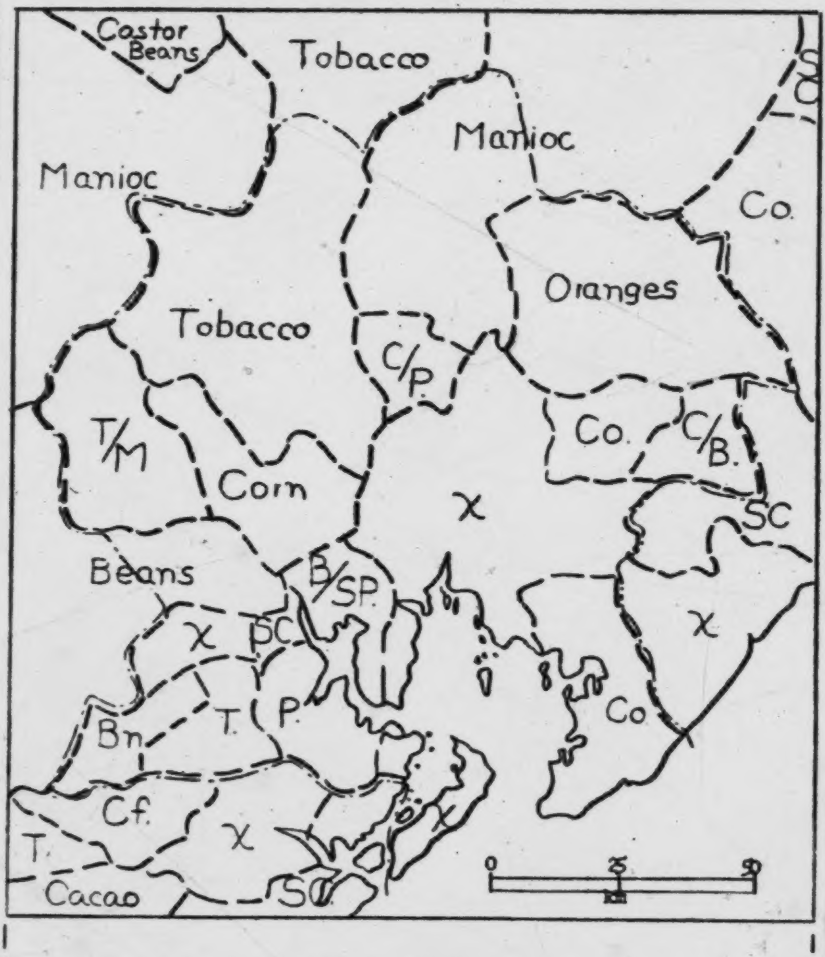
Castor Beans
Tobacco
Manioc
Manioc
S
C
Co.
Oranges
Tobacco
C/P.
T/M
Co.
C/B.
T
Corn
x
SC
Beans
B/SP.
x
SC
x
T.
P.
Co
Bn
Cf.
x
T.
Cacao
SC
0
25
50
km

RECÔNCAVO OF BAHIA

Crops Ranking Fourth in Area of Cultivation in 1948

M - Manioc
T - Tobacco
Co- Coconuts
Cf- Coffee

SC- Sugar Cane
C - Corn
B - Beans
P - Peanuts

Bn- Bananas
SP- Sweet Potatoes
A/B-Two crops with same rank
x - No crop of this rank with over 1 o/o of cropland

MAP 68

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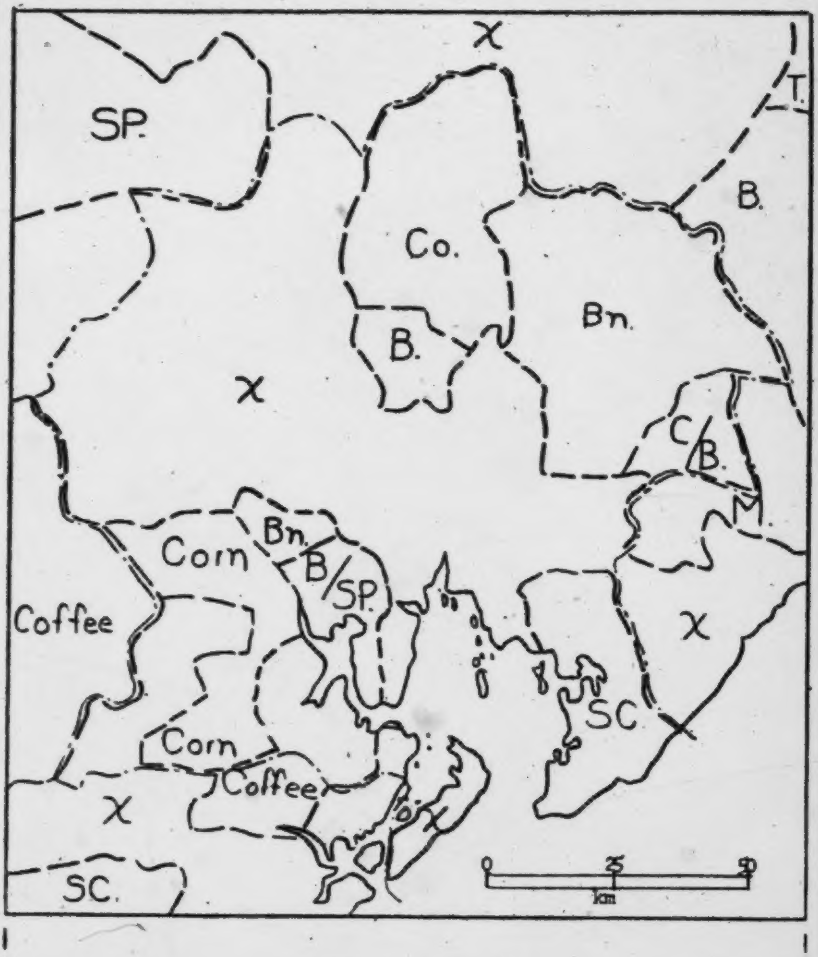
x
T.
SP.
B.
Co.
Bn.
B.
x
C/B.
M.
Bn.
Corn
B/SP.
Coffee
x
SC
Corn
Coffee
x
SC.
0
25
50
km

RECÔNCAVO OF BAHIA

Crops Ranking Fifth in Area of Cultivation in 1948

M - Manioc
T - Tobacco
Co- Coconuts
SC- Sugar Cane

C - Corn
B - Beans
Bn- Bananas
SP- Sweet Potatoes

A/B-Two crops with same area
x -No crop of this rank with over 1 o/o of cropland

MAP 69

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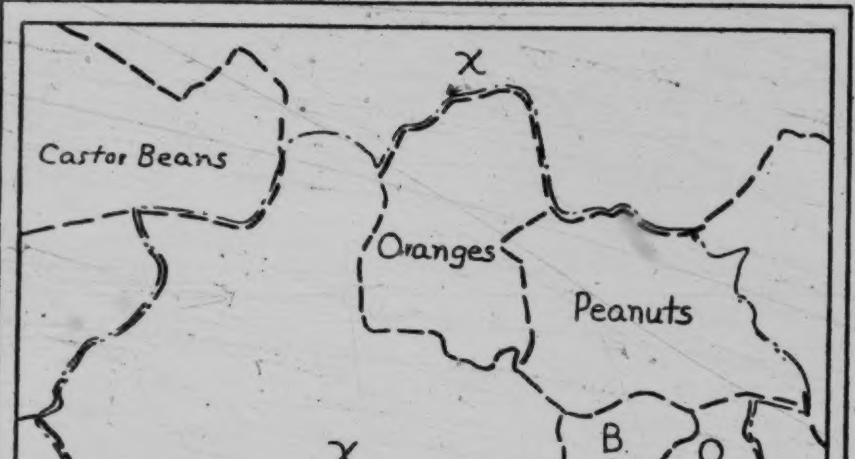
Castor Beans
X
Oranges
Peanuts
B.
O.
X
SP/P
Bn.
C
X
SP.
C
X
P
X
0
25
50
Km

RECÔNCAVO OF BAHIA

Crops Ranking Sixth in Area of Cultivation in 1948

C - Corn
B - Beans
P - Peanuts
Bn- Bananas

SP- Sweet Potatoes
A/B-Two crops with same area
x - No crop of this rank with over 1 o/o of cropland

MAP 70

241
311 In many municípios on the north, west, and southwest of the Recôncavo, where corn and beans were the first and second crops, manioc and tobacco were third and fourth or vice versa. On the other hand, sugar cane was rarely a significant crop in any município where either corn, beans, tobacco, or manioc occupied a leading position.

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311 Crop Combinations and Monocultures. The crop combinations shown on Map 71 and Map 72 exist on two levels, as statistical combinations of the crops of various municípios and as functional associations of crops grown in an interdependent system.

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311 The statistical crop combinations of the Central Recôncavo do not correspond to functional systems of cultivation, for although sugar cane, manioc, and tobacco are produced within individual municípios, the cultivation of sugar cane is entirely separate. The manioc and sugar cane of São Filipe and the tobacco and coffee of São Félix are also cultivated separately. The statistical combinations, therefore, merely summarize the economic specialization and diversification of the município economies. The tobacco-manioc and the corn-bean combinations of most municípios of the perimeter of the Recôncavo, from Alagoinhas on the northeast to Conceição do Almeida on the southwest, signify functional as well as statistical relationships. On the other hand, monocultural systems dominate within the Central Recôncavo and in a few other places. The areas in which the individual functional combinations and monocultures predominate are delimited as nodal crop regions on Map 73. The arrows on the map (Map 73) indicate the intermeshing of crop regions in the transitional zones.

249
244
311 The most extensive of the crop regions belongs to tobacco and manioc. In this region, which extends from the Southwestern Recôncavo in a long arc to the Eastern Recôncavo, at least 70 per cent and usually

[TEXT CONTINUED ON PAGE 240]

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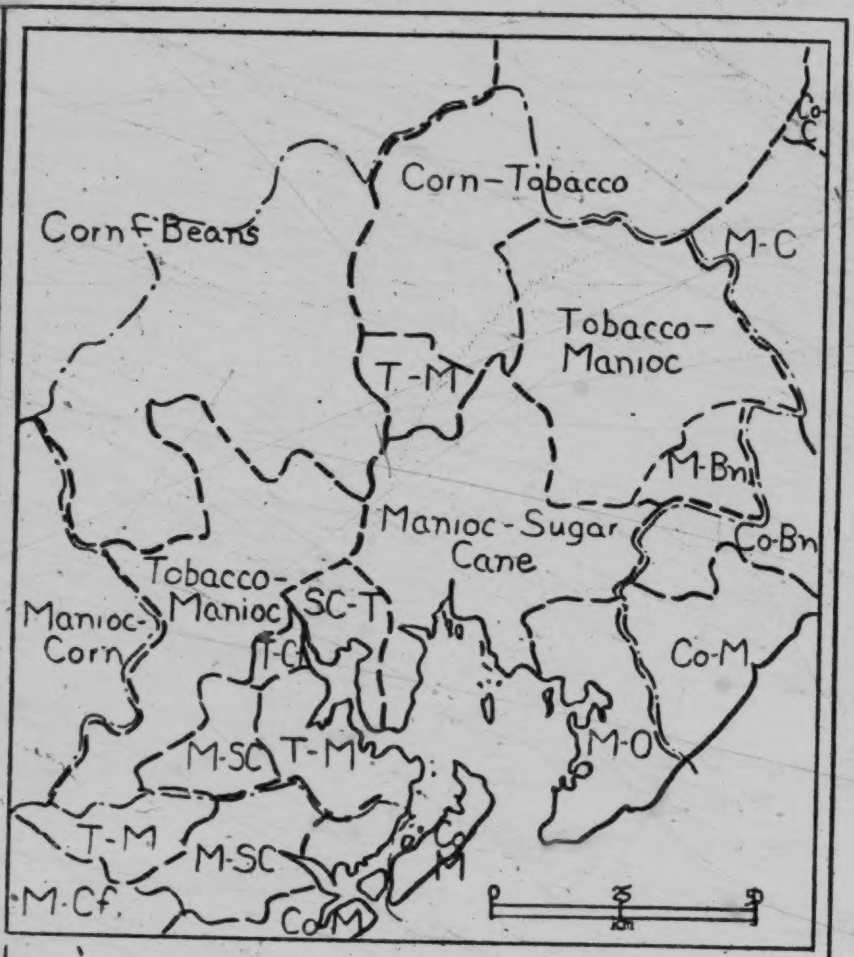
311


Corn-Tobacco
Co-C
Corn & Beans
M-C
Tobacco-Manioc
T-M
M-Bn
Manioc-Sugar Cane
Co-Bn
Tobacco-Manioc
SC-T
Manioc-Corn
T-C
Co-M
M-O
M-SC
T-M
Co-M
T-M
M-SC
M-Cf.
Co-M
0
25
50
Km

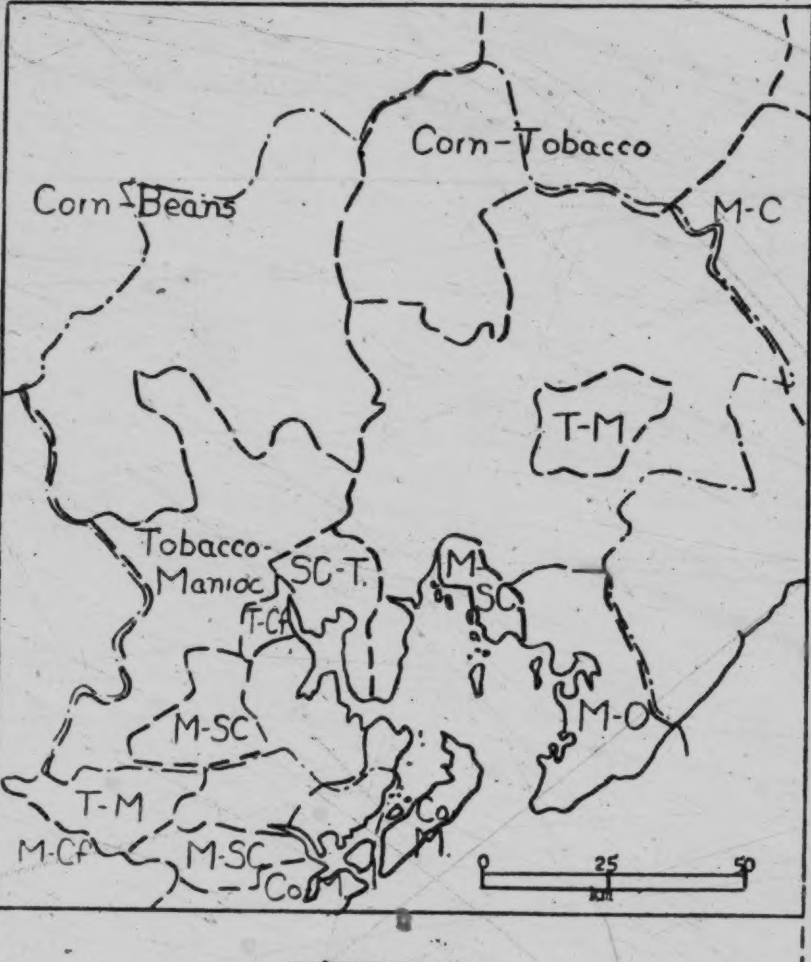
RECÔNCAVO OF BAHIA

Crops Ranking First and Second in Area of Cultivation in 1948

M - Manioc
T - Tobacco
Co- Coconuts
Cf- Coffee
O - Oranges
SC- Sugar Cane
C - Corn
P - Peanuts
Bn- Bananas

MAP 71

*102
241
311


Corn-Tobacco
Corn & Beans
M-C
T-M
Tobacco-Manioc
SC-T.
M-SC
T-Cf
M-SC
M-O
T-M
Co M.
M-Cf
M-SC
Co-M
0
25
50
km

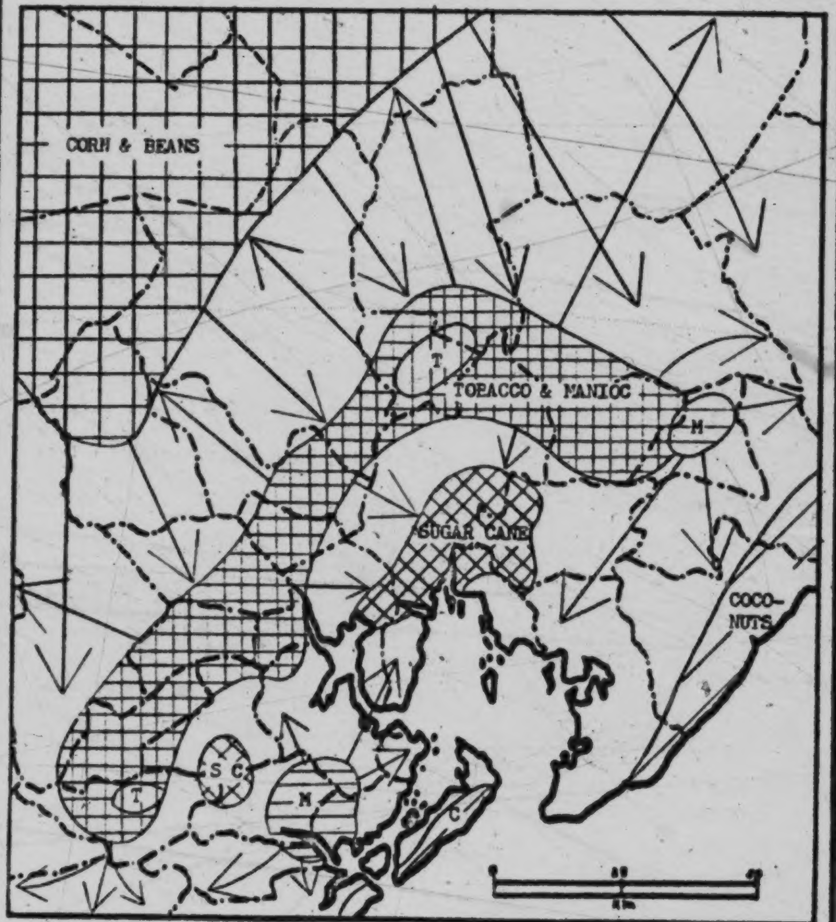
RECÔNCAVO OF BAHIA

Crops Ranking First and Second in Area of Cultivation in 1948 Where the Second Crop Occupied Over 20 per cent of the Total Cropland

M - Manioc
T - Tobacco
Co- Coconuts
Cf- Coffee
SC- Sugar Cane
C - Corn
O - Oranges

MAP 72

*102
241
311


CORN & BEANS
TOBACCO & MANIOC
T
M
SUGAR CANE
COCO-NUTS
S C
T
M
C

RECÔNCAVO OF BAHIA

Crop Regions Based upon Area of Cultivation

T - Tobacco
M - Manioc
SC - Sugar Cane
C - Coconuts

MAP 73

249 244 311 80 per cent of the total cropland was in these two crops in 1948 (Map 74). A minimum of 20 per cent of the total cropland of all parts of the region was in tobacco, and except for a break in Coração de Maria and northern Santo Amaro, in manioc. Associated with this region were two small areas in which one of the components dominated the other--tobacco dominated in Santo Antônio and manioc in Pojuca.

The relationship of tobacco and manioc area varied widely within this region of their most intensive cultivation (Map 75). The mean for all the municípios of the region was 42 per cent of the total cropland in tobacco and 36 per cent in manioc. The theoretically ideal "duoculture" was approached in Cruz das Almas, with 54 per cent of the total cropland in tobacco and 42 per cent in manioc. The ratios of the area in the two crops in individual municípios is indicated in the list below. Only in Muritiba and Cruz das Almas did the areas of the two crops have a relative balance. In the southwestern part of the region, tobacco was ascendant in Santo Antonio and manioc in Conceição do Almeida.

Ratio of Tobacco and Manioc Area

Santo Antônio	Tobacco	3.50 to 1
Conceição do Almeida	Manioc	2 to 1
Cruz das Almas	Tobacco	1.25 to 1
Muritiba	Manioc	1.50 to 1
Conceição da Feira	Manioc	2 to 1
São Gonçalo	Tobacco	3 to 1
Coração de Maria	Tobacco	4.50 to 1
Santo Amaro*	Manioc	2.50 to 1
Catu	Tobacco	3 to 1
Pojuca	Manioc	20 to 1

*These figures are for the whole of Santo Amaro. Probably the ratio in its tobacco-manioc zone would be about 3 to 1 in favor of tobacco.

North of the Rio Paraguaçu the position of tobacco vis-à-vis manioc became progressively stronger through Coração de Maria and continued strong into Catu, where cultivation of tobacco abruptly terminated. Pojuca had a manioc monoculture, with only 4 per cent of the cropland in tobacco and 81 per cent in manioc.

*102
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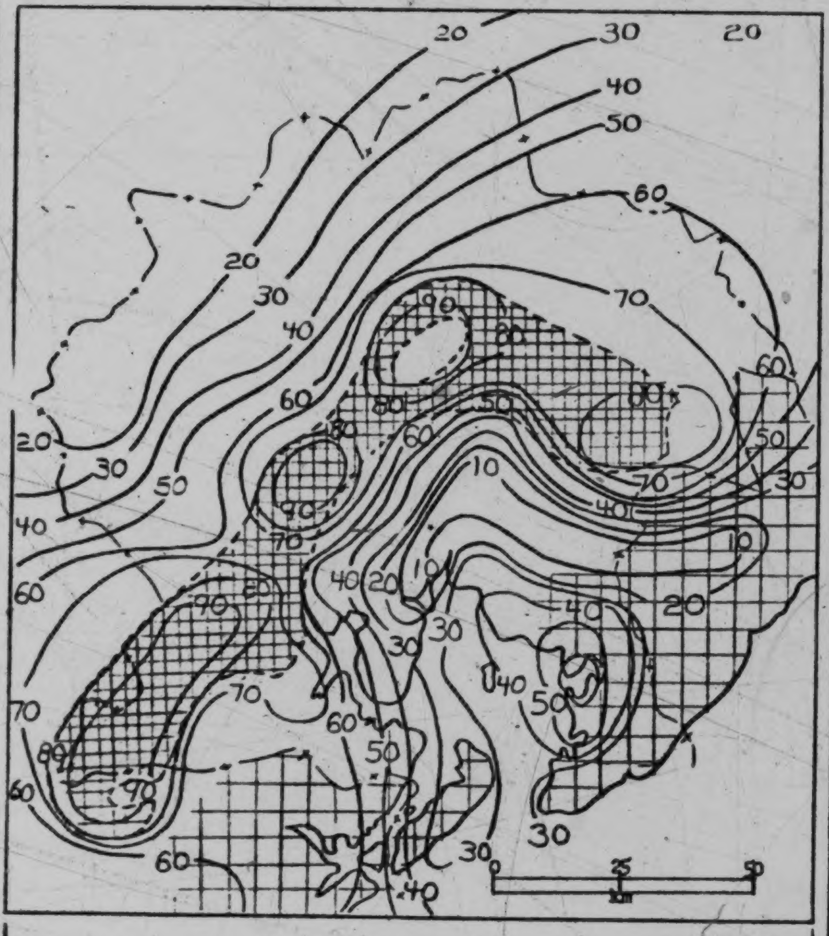
244
311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70
40
50
70
60
89
50
60
90
30
60
30
40
0
25
50
Km

▦ Tobacco/ Manioc Region

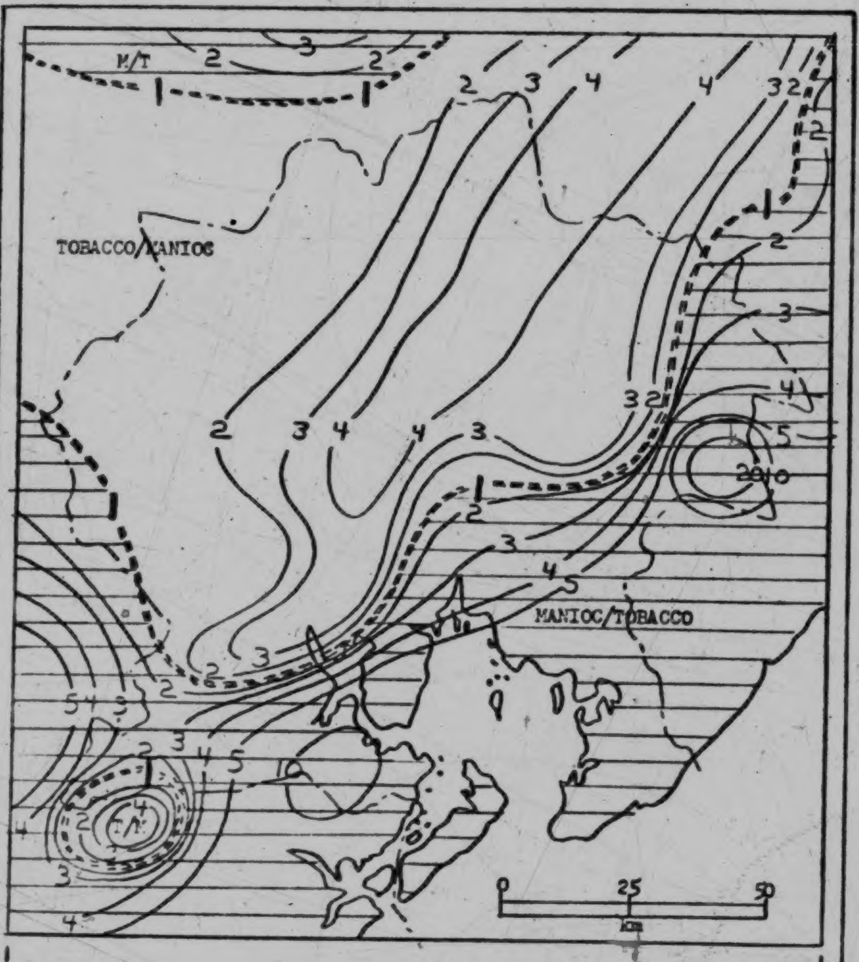
⊞ Municípios with no Tobacco

RECONCAVO OF BAHIA

Per cent of the Total Cropland in Tobacco and Manioc—1948

MAP 74

102
249
244
311


M/T
TOBACCO/MANIOC
MANIOC/TOBACCO
T/M
1
2
3
4
5
0
25
50
Km

RECÔNCAVO OF BAHIA

Relationship of the Cultivated Area in Tobacco and Manioc—1948

Tobacco/Manioc (T/M) - Area in tobacco exceeds area in manioc
Manioc/Tobacco (M/T) - Area in manioc exceeds area in tobacco

MAP 75

249 The physical setting of the tobacco and manioc region is distinc-
244 tive in terms of the particular combination of topography, soils, climate,
311
13 and vegetation which are joined along its crescent axis. The region lies
along the semi-circular edge of the interior upland, overlooking the
Bay and the Coastal Plain. In the south the fields of manioc and tobacco
occupy the upper surfaces of the Crystalline Uplands and the adjacent
Intermediate Hills. In the north, cultivation shifts to the summits and
upper slopes of the Intermediate Hills, although there is some concen-
tration on the extreme southern edge of the taboleiros. Thus the region
occupies the deep flat-lying residual crystalline soils in the south
but in the Tertiary soil zone to the north follows the slope lands where
there is more rainfall and perhaps better local soils. The close corres-
pondence of this region with the forest and scrub-forest transition has
been repeatedly emphasized. A traverse across the tobacco-manioc region
anywhere between Conceição do Almeida and Feira de Santana takes one
from rough hills with at least scattered patches of broadleaf evergreen
forest to flat uplands with cactus, thorny brush, and licurí palms.

249 A comparison of the map of population (Map 21) and of the rela-
244 tionship of tobacco and manioc cultivation (Map 75) points up the neces-
433
161 sity for local sources of basic subsistence products. In the Southwest,
361 where rural populations are relatively dense and where there are a
number of large villages and towns, manioc tends to be cultivated over
a greater area than does tobacco. In the tobacco-manioc region north
of the Rio Paraguaçu, where tobacco is usually the leading crop, the
density of rural population is lower, and there are no towns and only
[438] a few large villages. Thus there is close relationship between the
relative intensity of manioc and the size of the local market.

175 The recent historical pattern of agriculture in the tobacco-manioc
249
244 region can be reconstructed only on a general level. Cachoeira, which

Cachoeira, which
175 formerly included most of the western part of the region, was the center
178 249 of the production of tobacco for use in the slave trade. The growth of
[567] the trade in leaf tobacco in the nineteenth century brought great changes
[439] to the region, for it made tobacco a major commercial product in its own right, no longer dependent upon the slave trade. Eventually this development gave the region of tobacco production a greater economic importance than the sugar cane region, although it remained subordinate in political and social influence. The development of the new tobacco economy also gave the region a greater superiority over the *sertão*, which could satisfactorily produce *fumo em corda*, but could grow only the poorest grades of *fumo em fôlha*.

174 Probably the tobacco-manioc region supplied manioc as the sub-
244 249 sistence food of the sugar economy, since it is the only nearby area
433 which was a center of manioc production. Perhaps manioc was produced in the sugar cane zone, but in view of the intensity of sugar cane cultivation, this seems doubtful. In any case, the present relative level of manioc production in this crop region probably dates from the nineteenth century development of cigar tobacco production.

249 The second basic crop region of the Recôncavo is the sugar cane
311 monocultural area. It is sub-divided into a major zone, in Santo Amaro, São Sebastião, and São Francisco; a minor zone in Cachoeira; and an outlier in São Filipe. It is estimated that in the first two zones 90 per cent of the cropland was in cane in 1948. In the São Filipe outlier of the sugar cane region the proportion seems to have been lower--perhaps 50 per cent of the cultivated area.

The physical association of the sugar cane region north of the
[13] Rio Paraguaçu and the Bay is relatively simple--a humid and formerly forested undulating plain composed of mixed Cretaceous soils--*massapê*, *salão*, and *arêia*. In São Filipe the land is rougher, but the sugar cane is grown upon heavy soils similar to the Cretaceous series.

249 The portion of the sugar cane region north of the Bay is an area
161 of relatively dense rural population, with a large number of villages
361 and plantation settlements and one city--Santo Amaro. The remaining
areas of the sugar cane region have only moderately dense rural populations
and no major urban centers, although the cidade of Nazaré is very
close to the southern border of São Filipe.

[128] The tremendous historical significance of the sugar cane region has
been discussed at length in the section on the historical setting of the
249 Recôncavo. As far as the sugar cane zone of Santo Amaro, São Francisco,
178 and São Sebastião is concerned, the extent of the region does not appear
to have changed very much since colonial times. Old engenhos are found
throughout the zone, indicating past cultivation in all areas now in
cane. The present usinas cultivate sugar cane intensively clear across
the Cretaceous zone, so that it is not likely that the cane area has
contracted. However, there are several abandoned engenhos and settlements
on the north and east shores of the estuary of the Paraguaçu
which seem to indicate that sugar cane cultivation was formerly more
extensive around the Bacia do Iguape.

244 The two intensive crop regions of tobacco and manioc and sugar
249 cane, as outlined above, can be viewed as nodal areas which are basic
311 to the regional distinctiveness of the Recôncavo; they are for all
practical purposes included totally within its limits; their crop
patterns are not duplicated in any nearby area; and they include within
their boundaries a very large part--and the most productive part--of
its agricultural area.

241 In distinction to the above intra-Recôncavo regions there are
311 at least three crops which overlap the borders of the Recôncavo, forming
crop regions which have their most characteristic development in
adjoining areas. The Atlantic coast of Salvador and Itaparica supports

The Atlantic coast of Salvador and Itaparica supports 245 a coconut monoculture—a monoculture which is most strongly developed 311 north of the Recôncavo in Camassari and Mata de São João. The actual area of the coconut monoculture within the Recôncavo is slight, and beyond this monocultural zone, coconut cultivation is rarely significant within the region.

The coconut monoculture lies between the littoral forest and the beach in Itaparica and between the *agreste* and the beach in Salvador and in the *municípios* farther north. Except in the *município* of [161] [162] Salvador, the rural population of the coconut area is not dense. The [361] typical settlement of this zone is the fishing village, sprawled over the beach near the mouth of a small stream. Inland the population is scattered.

243 A much more important crop system intrudes upon the Northwestern 244 Recôncavo—the corn-bean system. The nuclear area for this system seems 311 to lie in northern Serrinha and in the *municípios* bordering upon the state of Sergipe. The area in which over 80 per cent of the cropland was in corn and beans in 1948 overlapped the borders of the Recôncavo into western Feira de Santana and Santo Estêvão—a zone of low *serras* (Map 76). In this zone the area in corn was from one to two times the area in beans (Map 77).

[134] Most of the soils of this region are either crystalline or Tertiary sands, but the pockets of soil which are actually cultivated are almost invariably heavier and more water retentive than are the sandy upland soils of the *taboleiros*. The corn-bean region generally [162] has a small but nucleated rural population and a few medium-sized *cidades*, which are the only towns of the very large *municípios* which are charac- [361] teristic of the area. However, the part of the corn-bean region which overlaps the Recôncavo has a number of villages and hamlets in the valleys of the *serras*.

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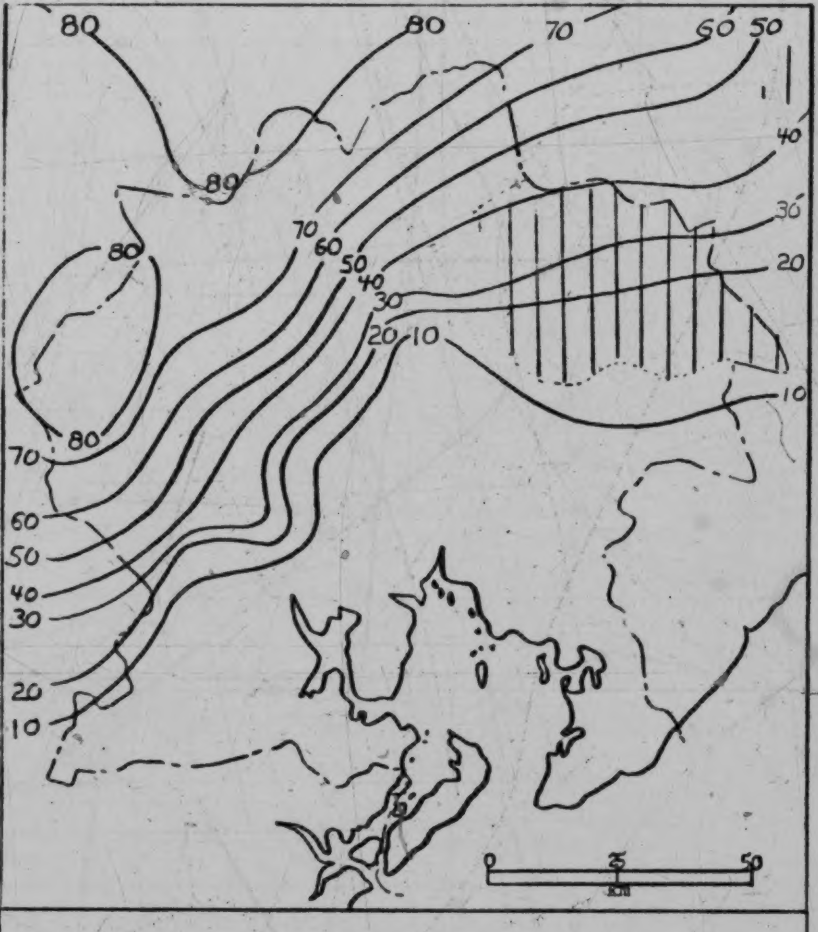

80
80
70
60
50
40
30
20
10
0
25
50
KM

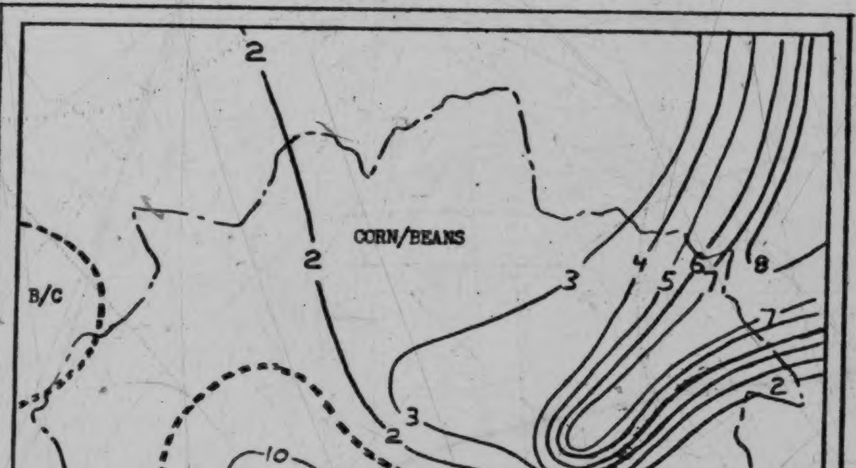
RECÔNCAVO OF BAHIA

Per cent of the Total Cropland in Corn and Beans—1948

Shaded area - Corn only

MAP 76

*102
243
244
311


2
CORN/BEANS
B/C
3
4
5
6
7
8
10
BEANS/CORN
B/C
0
25
50
Km

RECÔNCAVO OF BAHIA

Relationship of the Cultivated Area in Corn and Beans—1948

Corn/Beans - Area in corn exceeds area in beans
Beans/Corn (B/C) - Area in beans exceeds area in corn

MAP 77

241
311

Between these principal crop regions in which the basic functional groupings or monocultures dominate the cropland, there are transitional zones in which the systems intermingle. Between the corn-bean region and the tobacco-manioc region there is a broad zone in which neither crop system dominates—a zone extending from south-central Castro Alves in a vast arc around the Recôncavo to Entre Rios. Within this zone the distribution of corn and beans and tobacco and manioc is general—there may be local specializations based upon such factors as soils and precipitation, transport and market facilities, availability of fertilizer, etc., but any area of distrito size is likely to cultivate all of the four crops. In the northeastern part of this transition zone, in Alagoinhas and Inhambupe, corn and tobacco dominate in their respective combinations. In northern Castro Alves manioc and corn are very strong.

The inner transition zone between the tobacco-manioc region and sugar cane region is narrower and much less a zone of mutual interpenetration. The edges of the cane areas are almost invariably abrupt—scattered, but only widely scattered, cultivation of manioc and tobacco exists in the zone between São Gonçalo-Conceição da Feira and the cane areas in Cachoeira and Santo Amaro.

In the transition zone east of the cane monoculture—in São Francisco and São Sebastião—the crop situation is more confused. Here the relative amount of cultivation in the mata and the agreste is low, and the fields are concealed in the wild vegetation. Moreover, as the capital is approached, a number of diverse crops for the urban market, especially oranges, become important. There is a good deal of subsistence manioc cultivation in the remote areas—small plots cultivated by charcoal burners, fishermen, and marginal people of the urban fringes.

241 311 Southwest of the estuary of the Rio Paraguaçu, in Maragogipe and São Filipe, the crop pattern becomes very complex, as is shown by the relative distribution of cropland in São Filipe:

Manioc	33	per cent
Sugar cane	28	" "
Coffee	25	" "
Tobacco	11	" "
Peanuts	1	" "
Corn	1	" "

Plus small areas of beans, oranges, bananas, sweet potatoes, and coconut.

174 245 249 311 It is very likely that there has been a historical connection between the coffee culture of São Filipe and the main coffee zone far to the southwest. Apparently the development of tobacco cultivation in Santo Antônio has severed this connection.

249 244 221 Cultivation Systems--Tobacco and Manioc. The "ideal" system of cultivation of tobacco and manioc[1] in the tobacco-manioc region has the following general pattern:

(1) In mid-February a small tract, very commonly with an area of one *tarefa*[2] but sometimes larger, is cleared in the *capoêira de caatinga* (second-growth scrub-forest) or the *capoêira de mata* (second-growth
[412] littoral forest). Generally the *capoêira* is low brush, two to five
feet tall, which is easily cut with a *facão*--a long heavy knife which is a universal agricultural tool. Any heavy waste material that can be moved is dragged away from the plot; if there are tree stumps, they will not be grubbed out.[3] Sometimes the waste material on the surface of the field is burned, but this is by no means universal.

(2) A favored spot, either within the cleared field or in the adjoining *capoêira*, is prepared for a seed bed. Usually a site on the edge of a wood or near a steep slope is selected. Any available waste materials--corn stalks, old tobacco plants, weeds, brush, pieces of wood, and the like--are piled on the small plot, allowed to dry, and then burned.

249 244 221 (3) When the first rains come, the soil of both the seed bed and the fields are worked up with a hoe so that all vegetable matter is buried and all weeds turned under.

249 231 237 [417] (4) If possible the land is fertilized. Under "ideal" circumstances cattle are penned nightly over the area by means of a small temporary corral. The corral may be maintained for a long period over the seed bed, but on the field it is moved frequently so that the whole area is fertilized. Generally the resulting manure is left exposed to the sun and rain until planting time. However, this "ideal" method of fertilization is rare. A very large number of tobacco cultivators have no cattle—they are too poor and their operations are too small for livestock. Most cattle are held by fazendéiros (ranchers) who do not themselves grow tobacco. Moreover, the intensiveness of cultivation keeps the cattle population too small to provide enough manure for all local needs. Usually it is necessary to buy fertilizer. Cattle manure is sometimes purchased from a local fazendéiro. More and more, however, the tobacco cultivators are dependent upon cattle, or, better still, goat manure which is trucked into the Recôncavo from the sertão. The manure is spread over the seed bed to a depth of about one inch and over the field in such depth as the quantity allows.

249 221 (5) From mid-April to the end of May, depending upon the weather and the condition of the tobacco field, the seeds are planted. Almost without exception the seeds are taken from completely exhausted tobacco plants of the previous year, plants no longer able to produce salable leaf. The soil is broken open and loosened, and the seeds are sown directly into the fertilizer. Since the fertility of the seeds is very low, they are sown very thickly. The seed bed is fenced but is rarely covered. In sixty to seventy days the seedlings are ready for transplanting.

249
221 (6) In June, as the rains increase and as the seedlings are ready, the soil in the field is again broken, and small ridges about 18 inches apart are made with a hoe. Occasionally manure is put into the hills at this stage in place of earlier fertilization. Then the young seedlings are planted in the ridges and a small quantity of water added. Ten days or two weeks later there is a replanting where the original seedings have failed.

(7) A few days later the ridges are further hilled up. Thereafter the field is kept clean with a hoe.

(8) When tips begin to form, about two months after planting—late July or early August—the plant is topped so that six to ten leaves remain.

(9) About three weeks later the whole upper stalk is harvested. Two or three shoots near the ground are then allowed to develop. These shoots are topped, and eventually their leaves are harvested. As many as eight separate harvests are made from the shoots, and often this form of harvest continues into December.

249
276 (10) The harvested tobacco is tied to a long pole or rack and hung under the roof of the dwelling, beneath the eaves, or occasionally in separate thatch and adobe "barns." If the weather is damp, a fire is used to hasten drying. After they are thoroughly dried, perhaps three or four weeks, the leaves are cut down and stripped from the stalks. They are then graded, tied into bundles, and laid aside until they are sold, or if the farmer is a large producer, until a fermentation bulk is assembled. [442] The entire season's harvest is piled on the stack, and it is sold to the buyer at the end of the year.

249
244 The sequence of cultivation following the harvesting of tobacco is as follows:

(1) The field is turned with a hoe—if some tobacco plants are

249 244 still producing, they are carefully left in place--and narrow, shallow trenches eighteen inches or two feet apart are dug across the field. Segments of manioc stalk, freshly cut and two to four inches long, are planted in the trenches and covered.

(2) When the manioc appears, the plants are slightly hilled, and the field is kept clean.

(3) Any time after six months, but if conditions are not too pressing after nine months, the roots are dug up with a hoe. The disposition of the manioc roots will be discussed in a later section on processing.

(4) The field is re-planted to manioc until it will no longer produce a reasonable yield--one to four years depending upon the fertility.[4]

(5) The field is abandoned to wild vegetation and used as a rough pasture, or, if land is in very short supply, it is fertilized and planted to tobacco.

There are a number of problems which lead to departures from the ideal system of cultivation discussed above:

(1) In many areas where the intensity of cultivation is extreme, no second growth is available, and it is necessary to take fields directly from the cultivation of manioc, or other crops, to the planting of tobacco. It is important to remember that by no means all the soils of the tobacco-manioc region are suitable for tobacco cultivation, even [134] in such favorable centers as Cruz das Almas or São Gonçalo. Only the lighter, sandier soils of the hill tops and upper slopes and occasionally the porous soils of the basins are used for tobacco. These tobacco soils are popularly considered to be "poor," because crops other than tobacco or manioc do not thrive upon them.[5]

[237] (2) A key problem in the main areas of tobacco-manioc cultivation

249 is fertilizer. Most of the manure is purchased with money borrowed from
244 the tobacco buyers or local merchants. The rise and fall of the produc-
237 tion, yield, and quality of tobacco in the various _municipios_ of the Recôncavo can be explained to a considerable degree by two factors: (1) the availability of loan capital, and (2) the variation in precipitation. Probably the local supply of capital is more variable than the rainfall. Moreover, the quality of the manure available is usually poor. The manure of grass-fed cattle is a mediocre fertilizing agent, and probably the manure produced from the _capoêira_ _de_ _caatinga_ upon which most cattle feed is even more inferior. Goat manure is preferred, because it is believed that it produces both a larger crop and a higher quality leaf, but it is very expensive. Because those who can afford goat manure usually are also the more efficient ahd careful cultivators, it is difficult to be sure whether it is superior fertilizer or better care which produces the quality leaf.

The manure which is secured from sources within the tobacco-manioc zone has almost invariably deteriorated because it has been left for long periods in the sun and rain. The more expensive fertilizer imported from the _sertão_ is of a better quality, both because it comes from a drier zone and has thus suffered from less leaching in the corral and because it is kept in piles so that only the surface material is open to the elements.

In general every possible _cruzeiro_ that can be begged or borrowed is spent for manure, but if none can be bought, the cultivator will haul black soil (crystalline _massapê_) from the bottom lands and spread it over his field. Failing that, he will plant without fertilizer in a desperate attempt to produce a crop which will enable him to eke out the following year. Even if relatively fresh soil with a good growth of _capoêira_ is available, the cultivator can produce only a very small

249 crop of poor tobacco without the application of manure. Commercial
244 fertilizers are beyond the means of all but a very small minority of
237 cultivators. Those large growers who have experimented with commercial fertilizers report unfavorable results, presumably because of excessive leaching in the porous soils.

249 (3) The system of seed selection is illustrative of the general crudity of cultivation. As indicated above, the seeds are taken from the old and repeatedly harvested plants of the preceding season. The only criterion for selection is survival--the seed plant continued to produce longer than the rest of the crop. This does not mean that it produced more leaf or better quality--indeed, the opposite is often
[654] the case. Occasionally better seeds are available from the federal or
[242] state government, but the cultivators take little interest.

(4) The practice of harvesting the entire stalk or shoot at one time increases the variation in quality, since there are appreciable differences in the stages of development of the leaves. Immature leaves do not cure properly, while overripe leaves will produce only inferior grades.

249 (5) The primitive methods of drying and fermenting further re-
276 duce the quality of the leaf. Where the leaves are dried indoors over the fire, they acquire a smoky character. Frequently the debts of the
[424] cultivator force him to sell part of his crop prematurely so that a bulk large enough for fermentation is not assembled. On the other hand, if a large bulk of leaf is accumulated for curing and fermentation, there is always the risk of scorching, since thermometers are never used to check the temperature. A common abuse, and a costly one to the cultivator, results from delay in stringing the leaf up to dry. If the freshly cut leaves are allowed to remain piled in the sun before hanging, the green color is fixed. This damage cannot be

249 [276] removed by drying or by fermentation, and the leaves are very bitter.

(6) There is a constant but generally ineffective struggle [136] against insects which damage the tobacco crop. The most serious pest is the ant, which not only cuts the leaves but which also covers whole plants with extensive mounds. A number of plant diseases are common in the Recôncavo—their general effect is to reduce quality rather than to destroy the crop. The effects of plant diseases generally are masked by the much greater damage which occurs in cultivation and processing.

241 (7) The practices of land clearing, soil preparation, planting, harvesting, and curing, discussed above, are more highly standardized than is the sequence of land use. The "ideal" land use sequence is more characteristic of the zone of tobacco and manioc south of the Rio Paraguaçu—the Southwestern Recôncavo—than north of it. This land use sequence has been used as a standard of comparison because it is practiced where the highest quality of tobacco is grown and because it was the most commonly observed practice in most other parts of the tobacco-manioc region. However, even in this southwestern area, departures from the "ideal" sequence are relatively common—the introduction of corn and/or beans between tobacco and manioc is especially important. The sequence which is followed after tobacco cultivation depends not only upon the relative price of farinha de mandioca, corn, and beans, but also on the amount of fertilizer applied to the tobacco plot the previous year. Moreover, the chosen sequence will depend upon the original quality of the soil. In Cruz das Almas, at least, corn and beans were not planted in the old tobacco field unless the cultivator felt assured that the fertility was reasonably certain. If substantial risks were involved, manioc was planted.[6]

241 311 North of the Paraguaçu, modification of the "ideal" system is more frequent, especially in *municípios* where the area in cultivation is relatively small. In Coração de Maria, for example, only 4 per cent of the area was cultivated in 1948. Here it is possible to open more "new" land upon which tall *capoeira* has developed. Since this *município* is remote--but more in terms of road transport than in actual distance--there is greater need to produce a high-value, low-bulk crop, such as tobacco, and less possibility for the commercial production of manioc. Many fields of tobacco are allowed to revert directly into *capoeira*. Since the land is more thoroughly fallowed and since there are fewer cattle and thus less manure, fertilization is generally less extensive in this area. A similarly modified pattern of cultivation is found in Catu and in the more remote parts of São Gonçalo.

In Santo Antônio, where the intensity of agriculture is increasing, but where the cultivated area is still relatively small, much "new" land can be used. In this *município* the area in tobacco is [249] large in relation to manioc, and thus some tobacco fields obviously revert directly to brush.

249 244 There seems to be no definite land rotation period in the tobacco-manioc region. Rather the period is controlled by the availability of land. In 1948, the *município* of Cruz das Almas, one of the most intensively cultivated areas of the tobacco-manioc region, had one half of its total surface in cultivation according to the official data. Approximately one-quarter of the total area was in each of the two crops. Under these circumstances, no more than two years of fallow can have intervened between the harvesting of manioc and the planting of tobacco. However, not all of the *município* can be cultivated, and certainly no more than three-fourths of the total area can be used for tobacco. It follows that in many cases no more than

249 one year could have intervened between manioc and tobacco. By 1953, the
244 total cropland was obviously far below the 1948 level--probably no more than one-fourth of the land was under cultivation. Even so, the rotation period was extremely short, usually only one or two years. The cultivators are enclosed in a narrowing circle of exhausted soil, increasing cost of manure, and growing population. These are the fundamental problems of the tobacco and manioc region. All of these problems seem to be especially acute in the municipio of Cruz das Almas, but they are serious in every area where tobacco is grown.

243 The Cultivation of Corn and Beans. Corn and beans are usually
244 cultivated in the Recôncavo under a land rotation system, much like the system of tobacco and manioc. The qualification "in the Recôncavo," is necessary because the modifications of the corn-bean system as it overlaps the Recôncavo from the north and west are very significant. In the sertão the areas suited to crop cultivation are more limited, primarily because of the lesser amount of precipitation. Where suitable areas are available, such as at the foot of the low mountains, cultivation tends to be permanent, particularly if the soils are relatively good and if the population is relatively dense for so droughty a zone--as in Serrinha and Inhambupe. This permanent form of agriculture is called pé do monte (foot of the mountain) and is a relatively standardized agricultural system in the sertão, as well as in the crystalline zone near the western edge of the Recôncavo, in Feira de Santana and Santo Estêvão, where corn and beans are often cultivated around the low serras. In the Tertiary zone farther east, where there are no serras, a similar system of permanent cultivation is found in the valleys. Elsewhere within the Recôncavo, corn and beans are generally cultivated under the field and fallow system,

243 244 [134] either separately or in conjunction with tobacco and manioc. They are frequently grown on land thought to be not suitable for tobacco cultivation yet too good for manioc alone, such as the steeper slopes of the crystalline area where the heavier soils do not produce good quality tobacco.

Since the area in corn and beans is small and the amount of slope land large, the *capoëira* is extensive and frequently quite tall. After the slopes are cleared, the land is very often planted to mixed corn and beans, more rarely to one or the other. The crops are planted [221] in March or April, perhaps in May, and even in June for beans alone. The planting season for these crops is extended both because they are tolerant of changes in season and because as crops secondary to tobacco they have a lesser priority. Some corn is usually planted early enough [527] [862] so that it will ripen in time for *São João* (mid-summer day) festival for which fresh corn-on-the-cob is the traditional food. This festival is usually the beginning of the corn harvest, but the bean harvest [251] begins a month later. Both crops are harvested by hand and, after drying, are shelled by hand, sacked, and either stored or sold. When the fertility of the soil is higher than normal or when there is labor to spare, the field may be planted to manioc after the corn and bean harvest.

243 244 249 311 As a result of the interpenetration of the corn-bean and the tobacco-manioc systems, in many regions and on many individual properties the two co-exist. Usually the upland fields are in tobacco and manioc, with an occasional plot of corn and/or beans. Usually the slope-land plots are in corn or beans.

249 *The Cultivation of Sugar Cane.* In distinction to the crops discussed above, sugar cane is grown under a system of permanent

249 cultivation which is monocultural and highly standardized. As has been indicated, small scale sugar cane cultivation--in house gardens--is omnipresent in the Recôncavo. The area in such garden cane, however, can scarcely be as much as one per cent of the total cropland.

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471 Within the Central Recôncavo, sugar cane is grown principally to supply a relatively small number of sugar usinas. The usinas either own and operate or rent and operate the cane plantations or have a stable relationship with those plantations from which they buy cane. Under these circumstances it is both necessary and relatively easy to standardize the methods of production and cultivation. The industrial aspects of sugar production will be discussed in the section on processing.
249 The general system of sugar cane cultivation involves a five-year sequence:

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[492] (1) The land is broken with a large ox-drawn, wooden plow. The same plow opens parallel furrows, two to three feet apart, into which are laid pieces of cane stalk, cut from specially grown seed cane. The seed cane is then covered with hoes and packed with bare feet. Planting usually takes place during the last of the wet season--August and early September--to a lesser extent during the cane harvest--mid-September to mid-March--and at the end of the harvest in the autumn, if possible. Usually, however, the ground is too wet for planting during the months of May to August.

[412] (2) The cane is weeded frequently with a knife or a hoe. After a year of growth it is cut and carted away to the railroad. The leaves and upper stalk are left on the field and after drying are burned, except for some small part which is used as fodder.

(3) When the roots sprout again, the field is weeded and kept clean as the second-year cane develops; and after a year, the cane is harvested again. Generally this re-growth is repeated three times, so that there are four harvests for each planting.

249 (4) The field is burned for the last time, and as new cane or grass appears, it is used as pasture.

(5) After one year of pasture, sometimes more, the field is replanted to cane.

[529] The length of the harvest varies. It begins with a festa (festival in the first week of September and continues as long as there is cane and as long as the heavy rains hold off--usually about six months.

249 311 Within the sugar cane area most of the land is in cane or in temporary fallow pasture except: (1) very wet bottom lands; (2) steep slopes; (3) villages; and (4) the lands and yards occupied by the mills. The general aspect of this area is that of an unbroken sea of cane. Single fields are often large--a square kilometer is not uncommon--but they are divided into separate plots. The cultivation of other crops within the sugar cane area is very limited. Small house gardens for the laborers are common, but other commercial agricultural forms of land use are rare.

249 423 257 184 Land holdings, as will be seen, generally are large under this system. The orientation of the sugar industry in São Filipe is somewhat different than in the zone discussed above. Properties are smaller, the monocultural aspect less dominant, and the whole sugar economy more primitive. There were eighty-two small sugar mills in this area in 1940, compared to the eight large usinas of Santo Amaro. [273] Many of these produced crude sugar (rapadura) rather than the refined sugar or cane brandy (cachaça) which are the main products of the zone north of the Bay.

245 The Cultivation of Coconuts. The final important agricultural system of the Recôncavo is the coconut monoculture, a less highly organized permanent culture than the sugar cane system.

245 [311] Most coconuts are grown on moderate-sized plantations along the beaches, in sands, or occasionally in sandy loams. North of Salvador they are grown on dunes and beaches and, back from the sea, in sandy stream valleys where the supply of ground water is generous. There seems to be little selection in choosing coconuts for reproduction. Usually the nuts are planted eight meters or so apart, with a pile of organic trash over and around the nut to provide some additional fertility and to hold the moisture necessary for germination. The sprout must be protected from foraging animals, but once growth is well started, the tree receives little attention and no fertilization.

[433] Yields are moderate to low, from 15 to 40 per tree. Apparently the yields per tree are substantially higher (double) in the Bay area--Itaparica and Camassari--than in the area farther north--Mata de São João and Esplanada. [443] In the Bay area the nuts are usually sold in the markets of Salvador without processing.

241 178 Conclusion. The basic determinant of cultivation practices in the Recôncavo is custom. This is probably less true of the cultivation of sugar than of other crops, but the weight of tradition is heavy upon all agricultural enterprises. [454] It may be said that many relatively primitive agricultural practices survive because of ignorance of newer techniques and because of a lack of capital for investment in new tools, in machinery, in better seed, and in permanent land improvement. The importance of these factors in limiting change in Recôncavo agriculture, particularly as general factors operating indirectly upon individual cultivators and individual farms is not to be denied.

However, when the individual cultivator--sugar planter or tobacco share-cropper--is given an opportunity, in the form of new techniques and the necessary capital, to change and improve his operations and

BB 241 178 increase his production and he rejects these opportunities, it is clear that strong non-economic forces are operating directly upon the individual. These forces are the rigid agricultural and social traditions of the Recôncavo society, which are given particular rigidity by the explicit conservatism of the Recôncavo. BB 241 571 178 These traditions are given particular force by the strongly personal character of social and economic relationships in the Recôncavo. The relationship of the share-cropper with the landlord, of the buyer of tobacco with the seller, of the cane field worker with the foreman or usina manager, of the cidade store keeper or agent with the banker or dealer in the capital, are all strongly personal and generally of long standing. Under these circumstances any adventurism by one individual will bring him, if he is in a subordinate position, under the pressure of the traditional bias of those above. If he is in a superior position, any adventurism on his part will bring him not only the criticism of all his colleagues but the personally expressed resistance of his dependents. To the present at least, the vested interest of Recôncavo culture in the fixity of its agricultural systems has successfully resisted major change.

B BB 241 The system of monocultural agriculture, represented in the Recôncavo by sugar cane cultivation, is a traditional element in Brazilian agriculture. Not only sugar cane, but also cacao, coffee, and many other commercial crops are grown in Brazil as monocultures. Specifically, sugar cane monocultures are found in Pernambuco and the other states of the Northeast, in Rio de Janeiro, in Minas Gerais, and in São Paulo.

However, in Brazil as in the Recôncavo, monoculture is being superseded by diversified cultivation. "Too much has . . . been made of the misleading statement that Brazil is a 'one-crop' country," Wythe has said.[7] In the center and south of the country, growing

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urban populations have led to diversification of agriculture. In the Recôncavo the trend toward diversification is still rudimentary; there are rarely more than two important crops cultivated in any one area. The specific extent to which the corn-bean and tobacco-manioc systems of the Recôncavo are found in other parts of Brazil is not clear. Corn and beans are grown in almost all parts of Brazil, but the extent of the system of joint cultivation is not apparent. During travels across the sertão of Bahia and across Alagoas, both separate and joint cultivation were frequently observed. In the northeastern interior, tobacco grown for fumo em corda is frequently succeeded in the field by manioc, but the tobacco and manioc system of the Recôncavo apparently is not duplicated in any other area of Brazil. In Rio Grande do Sul tobacco apparently is produced as a monoculture in a very restricted area. However, the practice of land rotation, involving crops other than the tobacco and manioc of the Recôncavo, is the most widespread of the Brazilian systems of cultivation.

000 Footnotes - Chapter VI

[124] [127] [114] [1] The discussion of the cultivation of tobacco and manioc is based upon the following sources: (1) private conversations with Mr. G. G. Jay, a tobacco buyer and grower of long experience in Bahia and in other regions of South America; (2) Walter Alberto Egler, "Aspectos Gerais da Cultura do Fumo na Região do Recôncavo na Bahia," *Boletim Geográfico*, Vol. X, No. 111 (November-December, 1952), pp. 679-688; (3) general field observations throughout the zone, except in Coração de Maria and Caju, and, during 1953-1954, detailed observations in São Gonçalo and in Cruz das Almas.

[804] [2] *Tarefa* means "a task," "a day's work," or "a piece of work," but it is also an antique unit of area which is the folk-unit of area throughout much of Brazil. Its size varies from place to place, but the *tarefa baiana* equals 0.4356 hectares. In many areas one *tarefa* is considered to be the usual size of the tobacco planting of one man, but it is obvious from a comparison of the labor force and area in tobacco that in many areas the plantings per person must run much larger. In any case, the individual plots are very likely to be one *tarefa* each.

[3] In many areas the tree stumps have entirely disappeared as a result of the intensive cultivation, which severely restricts the size of the wild vegetation which can develop during the fallow period.

[114] [243] [4] This interpretation differs, at least in emphasis, from that of Walter Alberto Egler, *op. cit.*, pp. 679-688. He suggests as the characteristic sequence, tobacco, corn and/or beans, and then manioc. Undoubtedly this sequence is important, but the field investigation for the prese study revealed that the direct replacement of tobacco with manioc is more characteristic.

[239] [5] However, tobacco does not produce well on these poor soils unless manure is used, and even the yields of manioc are low unless it is planted in a field where there has been a relatively recent application of manure.

[244] [6] The seed for corn, which is edible, has value in itself. The stalk of manioc has no utility except to reproduce the crop. Thus when manioc is planted, the cultivator invests only his labor and the questionable value of the land.

[7] See section by George Wythe in Simon Kuznets, Wilbert E. Moore, and Joseph J. Spengler (eds.), *Economic Growth: Brazil, India, Japan*, p. 34.

CHAPTER VII

ANIMAL INDUSTRY

BB 231 433 Although the Recôncavo is primarily a subsistence and commercial crop region, livestock play a significant role in the agricultural BB [435] economy as beasts of burden and as a source of animal products. In 1948 there were about 800,000 to 850,000 livestock—cattle, sheep, goats, horses, asses, and mules—in the region, and the value of animal production was about Cr.$60,000,000.[1] Thus animals accounted for about 17 per cent of the total value of all agricultural products of the Recôncavo. About one quarter of the livestock were work animals essential to the operation of the agricultural economy--oxen, horses, asses, and mules.[2]

BB NB 231 233 442 443 The livestock industry of the Recôncavo is closely associated with the extensive livestock ranching economy of the Brazilian northeastern interior. In Bahia, as in most parts of Brazil, the sertão of the interior is a source region of livestock. The animals are driven from the sertão to the coastal nuclei of dense settlement and sold in the cattle market—in the Recôncavo, at the market of Feira de Santana. A portion of the cattle are slaughtered immediately to provide food for the large agricultural population, but a substantial number of cattle and the horses, asses, and mules are retained as work animals. The working cattle—oxen--are eventually slaughtered.

BB 231 Certain outlying parts of the Recôncavo share with the sertão in the role of producing livestock for the coastal market zone. Other areas, especially around Feira de Santana, function as fattening zones in which the cattle recuperate after the long drives from the interior.

231 Where there are large numbers of work animals the conditioning and maintenance of oxen and other beasts of burden are important agricultural activities. In all areas of the Recôncavo the livestock forage on grazing land rather than cultivated pasture, and there is no livestock feeding. Thus, animal husbandry in the Recôncavo is not part of a system in which crops are raised or pasture is planted to support or fatten livestock, as is the case in mixed farming areas.

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233 Pastured Land. According to the agricultural census, the total area used as pasture in the Recôncavo in 1940 was about 280,000 hectares--only two times the total cultivated area.[3] The total area of pastured land in 1948 must have been much greater, perhaps 400,000 hectares, for there was a strong increase in the number of animals, and it seems unlikely that there was much increase in the carrying capacity of the wild vegetation.

As was suggested in the physical setting discussion, the basic grazing resources of the Recôncavo are the caatinga and agreste. These vegetation formations, modified by cultivation, fire, and grazing into capoeira--second growth--are used extensively for livestock along the perimeter of the Recôncavo, where cultivation is scattered, but also in such intensively cultivated areas as the Southwestern Recôncavo. In essence, all the uncultivated rural land of the zone of the caatinga and the agreste is grazing land, since there are few fences to restrain the large numbers of livestock.

There are scattered areas of grassland in the caatinga, the agreste, and the mata zones of the Recôncavo. Very often the caatinga of the uplands of the crystalline zone is replaced by grasses along the poorly-drained valley floors. These grassy valleys are scattered throughout the western half of the Recôncavo and are used as pasture

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for small herds of dairy cattle and for the maintenance of a relatively small number of higher grade beef cattle and horses. Around Feira de Santana, however, there is a prominent concentration of grassland, and it is here that the cattle from the sertão are fattened before they are dispersed over the Recôncavo.

In the sugar cane zone coarse, rank grasses cover the lowest valley bottoms, which are frequently too wet and muddy to permit the transport of harvested cane. These grasslands are the pastures on which are grazed the work oxen and incidental animals used in sugar production. The limited areas of permanent pasture are supplemented by the fallow fields and by leaves from the harvested cane. Scattered patches of grass are found elsewhere in the humid lowland. Along the eastern side of the sugar cane zone there are grassy openings in the forest. In this area there are several cattle ranches on which the weak or sick animals of the large sugar usinas are rested and the reserves of oxen maintained. The forest, which is developed on mixed, sandy soils and is more like agreste than true littoral forest, apparently is held back by heavy grazing and by burning, so that the grassy openings are preserved.

In effect all the littoral forest is used for grazing to some extent. Even in very remote areas donkeys and pigs are to be found foraging on the scanty grasses and herbaceous vegetation of the forest floor.

In addition to the quality of the wild vegetation, two contradictory economic and social forces are important in determining the location and extent of grazing land within some local areas. In the Recôncavo, crop cultivation is generally more profitable than livestock industry. Where economic forces operate freely, grazing is likely to be relegated to the less desirable areas--infertile soils, poorly drained valleys, or zones remote from the local market. On the other

233 556 311 On the other hand, ranching is a prestige activity; the rancher almost invariably is an influential and relatively wealthy member of the local community. As such, he may command for grazing purposes land which would be more profitable to the owner and to the whole economy if it were under cultivation.

231 Livestock Production. The large livestock animals which are important to the Recôncavo—cattle, asses, mules, horses, sheep, and goats--are primarily the products of ranching enterprises, i.e., livestock *fazendas*. Many of these animals are bred in the *Sertão* west and northwest of the Recôncavo and brought into the region as young stock ready for use as labor animals, as milk producers, or as mature animals ready for fattening and slaughter. However, there is some basic livestock production within the Recôncavo, especially in the outer ring of *municípios*. Here livestock are raised under conditions basically similar to those of the *Sertão*.

233 The cattle *fazenda* is a grazing enterprise in which the reproduction of the herd is uncontrolled; there is no selective breeding. *Vaqueiros* (cowboys) are employed to hold and to move the herds over vast distances. [232] From time to time the young bulls are emasculated, and as they approach maturity, these oxen are usually driven to the Recôncavo. The remaining cattle are held until maturity and then driven across the *Sertão* to Feira de Santana. The characteristic cattle *fazenda* exists in a modified form in the Recôncavo. Since the land for grazing is more restricted, the herds are smaller, and sometimes the grazing area is fenced. Second growth is the basic forage, though, as has been seen, grass here plays a relatively more important role than in the *Sertão*. [232] There have been a few attempts to breed selectively in the Recôncavo.

231 The production of asses, mules, and horses is concentrated outside the Recôncavo. Apparently most of the work animals used in the Recôncavo--oxen as well as asses, mules, and horses--were born on the *Sertão* and were the products of the same ranches which produce beef animals.

In distinction to these larger animals, swine are produced in large number within the Recôncavo. Moreover, they are almost exclusively the products of small enterprises--pigs are raised in ones and twos by small farmers. They eat the household waste and root in the abandoned [443] fields and the second growth. When they are mature or when the need for cash is pressing, they are sold in the local market, either alive or slaughtered.

Most of the livestock of the Recôncavo are descendent from animals introduced into the Northeast during colonial times. In general [232] there has been little deliberate selection of strains--those animals which have survived disease, insect pests, prolonged semi-starvation, and casual abuse have conferred their characteristics upon the present generation. Thus, most of the livestock are scrubby and inbred, inefficient producers of meat, milk, or energy.

Cattle. The total cattle population of the Recôncavo was 395,000 head in 1948, and the number was still growing. There were [433] almost three times as many cattle in the region as swine, the next most numerous animal, and the value of cattle production far exceeded that of other livestock.

Almost all of the cattle of the Recôncavo are of the unspecialized and ubiquitous Indo-Brazilian strain--rangy animals with long horns and a moderate hump, hardy and strong but not producers of large quantities of either meat or milk. Oxen of the same breed are important in [234] the sugar zone and in Feira de Santana, and both beef and milk cattle

231 [234] are found in all parts of the Recôncavo, although dairying is not a highly developed enterprise. It should be noted, however, that both oxen and milk cows usually end their careers in the slaughter house.

No município in the Recôncavo had less than 2,500 cattle in 1948, but there were only two important concentrations (Map 78). The largest of these was in Feira de Santana, chiefly around the cidade. Forty per cent of all cattle in the Recôncavo were held in this area. The second, and much smaller, concentration was in the sugar cane region, with about 8 per cent of the cattle of the Recôncavo. In order effectively to differentiate these concentrations and between them and the basal distribution of the rest of the Recôncavo, it is necessary to discuss briefly the specialized forms of livestock enterprise.

[492] (1) In the sugar zone a very large percentage (probably 70 to 90 per cent) of the cattle are oxen used as labor in the cane fields (Map 79). Since these animals are grass-fed exclusively--no grain is used--and since there are many disease problems, it is necessary to maintain a large local reserve so that day to day rotation is possible. In addition, the larger enterprises maintain ranches on which oxen and other labor animals, purchased in the Sertão or at Feira de Santana, are conditioned and at which ailing or weak animals recuperate. When they are no longer useful as draft animals, the oxen are butchered and sold to the local agricultural laborers. Only small quantities of milk are produced in this zone. 234 443

(2) Salvador, and to a lesser extent Feira de Santana, have milk sheds of importance (Map 80). In addition, a very small milk shed surrounds each cidade, although Cachoeira-São Félix is not well endowed in this respect.[4] The marketing of milk is local—the only exception discovered was the sale in Salvador of milk from the município of Camassari. The dairy industry around Salvador is relatively

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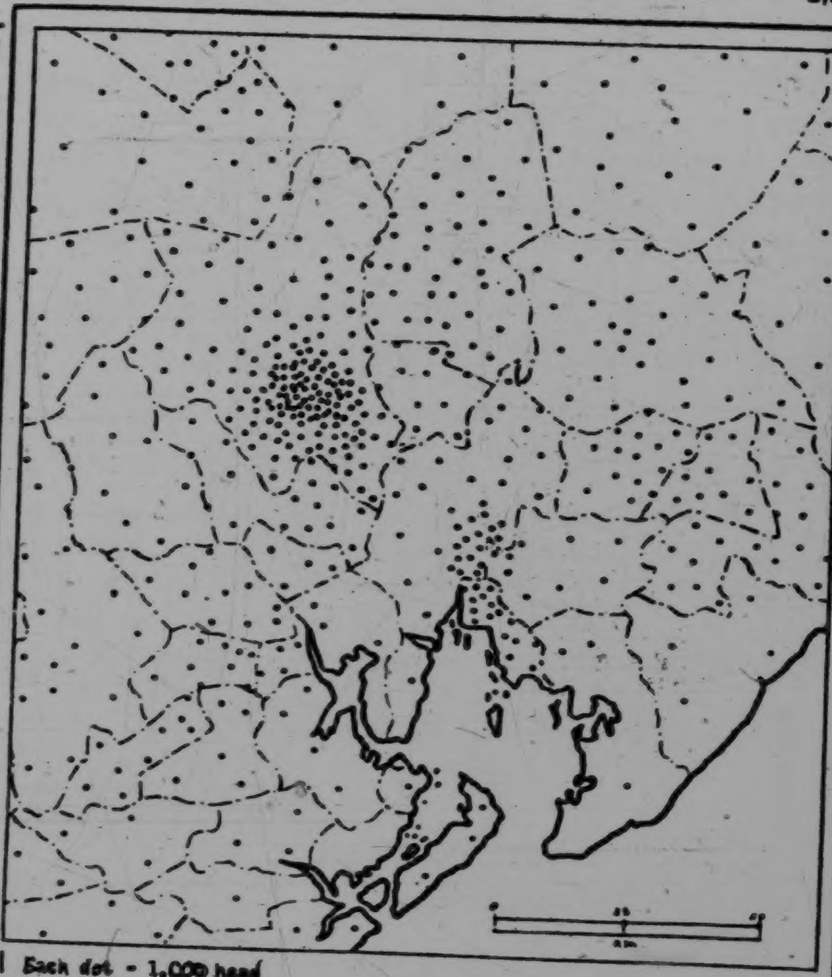

Each dot - 1,000 head

RECÔNCAVO OF BAHIA

Cattle--1948

Source of data: "População Pecuária, Em 31/12/1948."

MAP 78

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702
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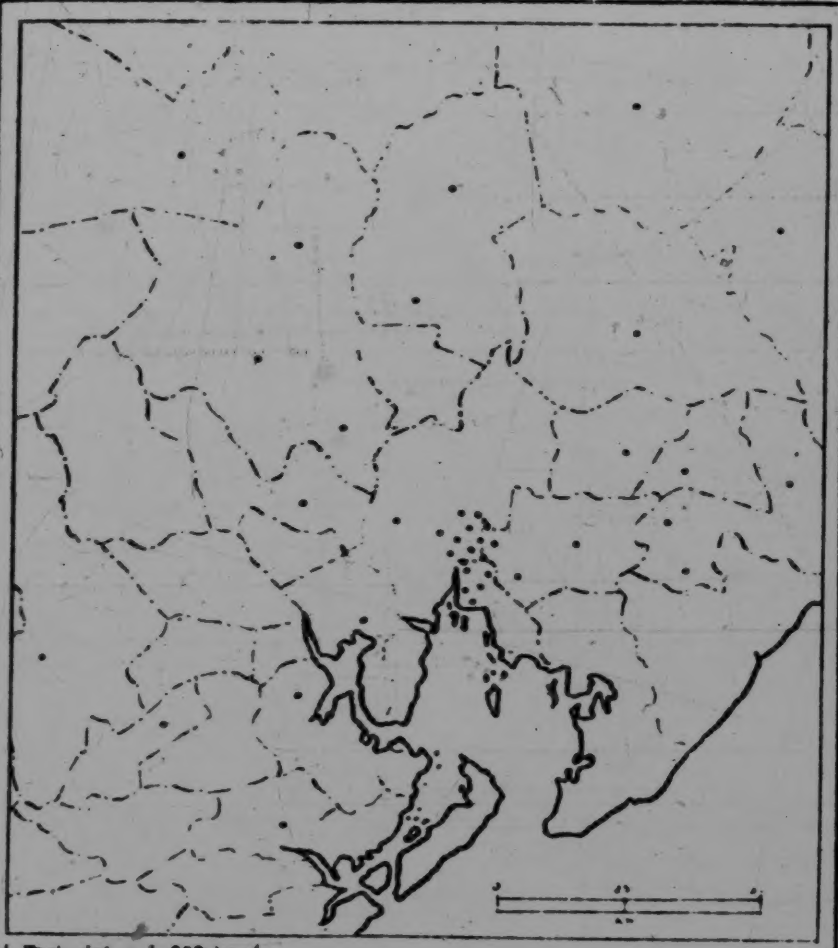

Each dot = 1,000 head

RECONCAVO OF BAHIA

Oxen—1948

(estimated)

Map 79

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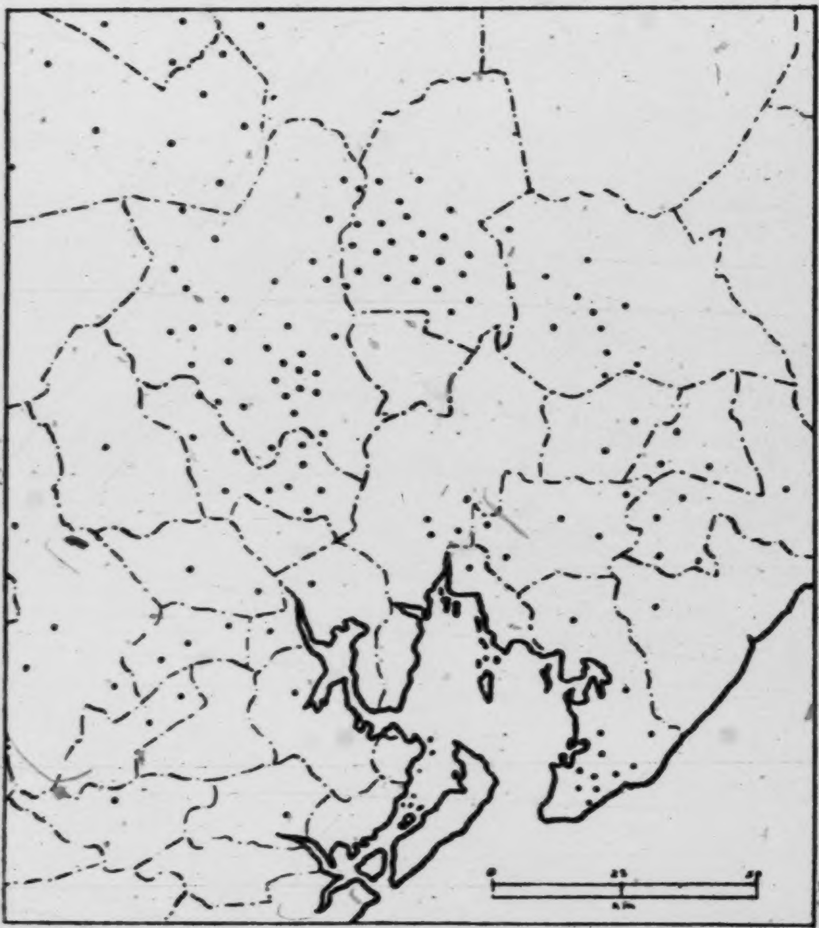

Each dot = 1,000 hectoliters

RECÔNCAVO OF BAHIA

Milk Production--1940

Source of data: Recenseamento Geral do Brasil: 1950. Censos Econômicos Bahia, Vol. II.

MAP 80

234 443 [493] [272] The dairy industry around Salvador is relatively large-scale, as is evident in the size and number of tank trucks which peddle milk through the streets of the city, and which bear the name of local fazendas. However, the milk has a low butter-fat content, is unpasteurized, and it is expensive, and many people use powdered milk which is imported from other parts of Brazil and abroad. The Salvador dairy industry is large-scale only in relation to the small-scale operations in other parts of the region, where the small quantities of available milk are carried to the cidades on mules or asses and sold from house to house.

233 443 (3) Feira de Santana is the principal cattle market not only of the Recôncavo but also of the state of Bahia. To its market (campo de gado) are driven the cattle of the northern sertão of Bahia and from as far west as the mountains. Before or after sale many of these cattle are rested and fattened on the pastures around the cidade so that the cattle population is large but fluid. Some of these cattle are butchered locally, but many are driven to Salvador before slaughter.

231 (4) In all other parts of the Recôncavo small-scale animal husbandry is very common. Many small farmers, sharecroppers, or renters [272] [234] [443] have one or two cows and sometimes a calf. The milk, if any, is used either by the family or sold in the cidade. In addition, there are a few large cattle ranches, usually producing both milk and beef cattle. Thus the unspecialized livestock economy of most of the Recôncavo is distinct from the labor animal concentration in the sugar zone, the Salvador milk shed, and the market animal concentration around Feira de Santana.

233 The pattern of distribution of cattle outside the Recôncavo is not markedly different from that of the adjacent areas within the region. In this respect Mata de São João is like Pojuca, Castro Alves like Santo Estêvão, and Nazaré like São Felix-Maragogipe. However, the

233} lower intensity of crop cultivation beyond the Recôncavo gives livestock greater relative importance around the periphery.

Cattle were the most numerous of the major livestock in the Recôncavo in 1948, except in four *municípios*—Cruz das Almas, Conceição do Almeida, São Filipe, and Itaparica, where there were more swine. Cattle were also the most numerous livestock in all *municípios* bordering the Recôncavo on the east and north, and in Castro Alves on the west.

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433 Apparently the total cattle population in the Recôncavo is increasing rapidly. In 1940 there were only 250,000 cattle in the Recôncavo; in 1948, 394,990. It is inferred from both the state livestock data for 1952[5] and from field observation that this growth continued through 1953, though probably at a more moderate rate. Unfortunately, a comparison of the total cattle population of most of the *municípios* in 1940 with the number in 1948 does not provide a clear basis for generalizations which can be checked against the situation as [128] observed in the field. Either many of the data are in error, or the changes in cattle population were often unrelated to the general pattern of agricultural development in many *municípios*. Some of the changes indicated by the data can be accepted without too much question—the growth of the cattle population of Feira de Santana, 206 per cent, is a concomitant, it seems likely, of the general increase in cattle population in Bahia. It is possible that the contemporary growth of the city of Salvador and the improved transportation system have produced a precipitous decline in the cattle population in the sub-urban area and an increase in the tributary area beyond—Camassari, Mata de São João, and Pojuca. The population growth of the *cidade* of Alagoinhas apparently has resulted in a local displacement of cattle *fazendas* but in a peripheral expansion of livestock production. The decline

233 433 of Cachoeira as a regional center could account for some decline in its cattle population. On the other hand, the almost four-fold increase in cattle in São Francisco, more than two-fold increase in Itaparica, and almost two-fold increase in Jaguaripe, indicated by the data, are not credible in view of the general agricultural situation. A moderate increase in the cattle population of these areas, to serve the growing Salvador market, is reasonable enough, but not such an astronomical expansion.

231 433 Swine. Although much less numerous than cattle—there were 135,000 swine in the Recôncavo in 1948--pigs are similary ubiquitous. These animals are particularly important in Feira de Santana and Irará, in the Southwestern Recôncavo, and on the island of Itaparica (Map 81). In the Feira de Santana-Irará area swine were much less numerous than cattle, but in the Southwestern Recôncavo and on Itaparica they were the most common livestock animal. Pigs were also the most numerous livestock in adjoining Nazaré, Aratuípe, and Jaguaripe.

The swine population of the Recôncavo is almost surely increasing. This increase is strongly indicated by the evident general agricultural development of the Southwestern Recôncavo, the main center of swine production. A comparison of the 1940 and the 1948 data shows an increase which is in excess of the probable errors of the data. The pattern of change within the Recôncavo shown by the 1940 and 1948 data is irrational for many municípios, although the strong increases shown for the Southwestern Recôncavo and for Feira de Santana are reasonable in view of the observable development of these areas.

231 [472] In the cattle industry, big enterprises are dominant, but swine are produced almost exclusively by small holders, renters, and sharecroppers, each with two or three pigs. The swine are tough, thick-hided

[TEXT CONTINUED ON PAGE 279]

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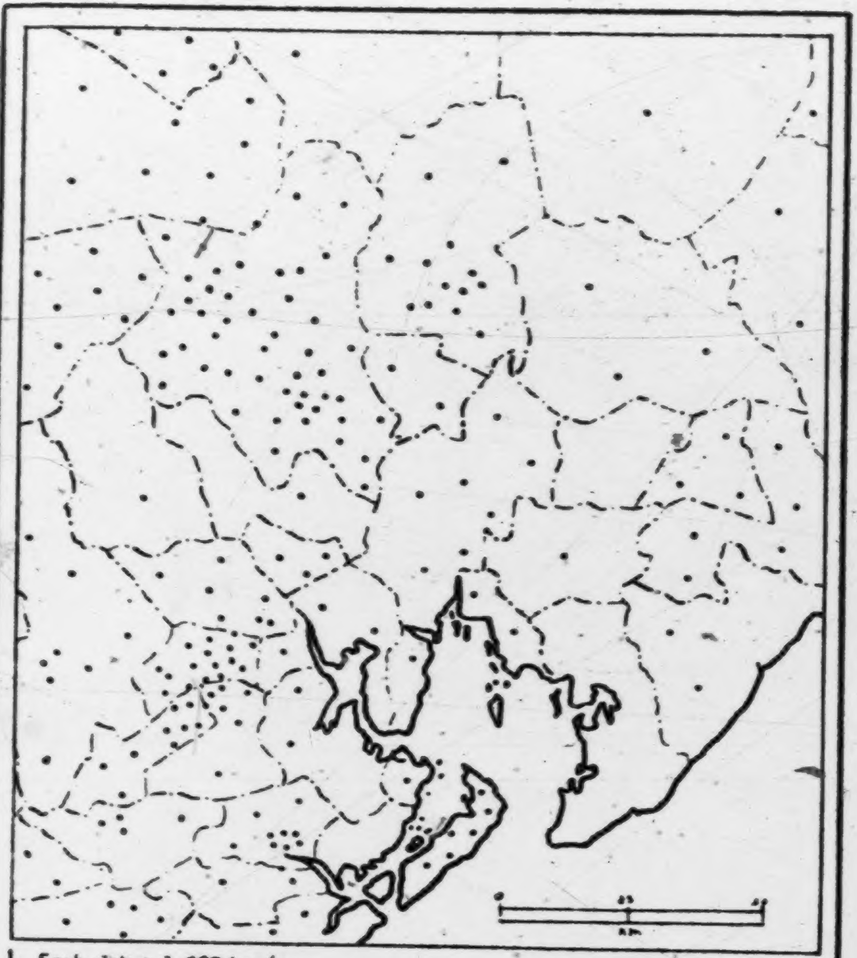

Each dot = 1,000 head

RECÔNCAVO OF BAHIA

Swine--1948

Source of data: "População Pecuária, Em 31/12/1948."

MAP 81

231 [442] animals, rangy and thin, which can and do exist on what they can forage in the second growth or whatever table waste is available. They are marketed one or two at a time in the local markets or are purchased by local buyers who transport a load of pigs into Salvador by truck or sailing boat (saveiro).

231 433 Sheep and Goats. Neither sheep nor goats are characteristic animals of the Recôncavo, but they are found in small numbers in several of its municípios. In 1948 there were about 80,000 sheep and 40,000 goats in the region. Almost all of these animals were low-grade but hardy local varieties. Goats are most numerous on the western sertão, but they are found in moderate numbers along the western edge of the Recôncavo (Map 82). The distribution of sheep is similar, but more uneven, and there is a conspicuous concentration around Feira de Santana (Map 83).

Neither animal ranks very high in the total livestock population of any Recôncavo município. Beyond the northern Recôncavo, from Conceição do Coite to Esplanada, sheep are the most numerous or second most numerous of all animals. In the west, goats are more important--these are the most numerous of all animals in Riachão do Jacuípe and are as numerous as cattle in Ipirá. Apparently the number of both animals is growing. Goats are increasing most rapidly, especially within the Recônçavo. The number of sheep is increasing slowly and
231 233 very irregularly. In the dry marginal zone of the Recôncavo, sheep and goats are produced on large fazendas in much the same manner as cattle. This is also true for the sheep around Feira de Santana. In many areas, however, small holders occasionally run a few goats and, less frequently, sheep in the second-growth.

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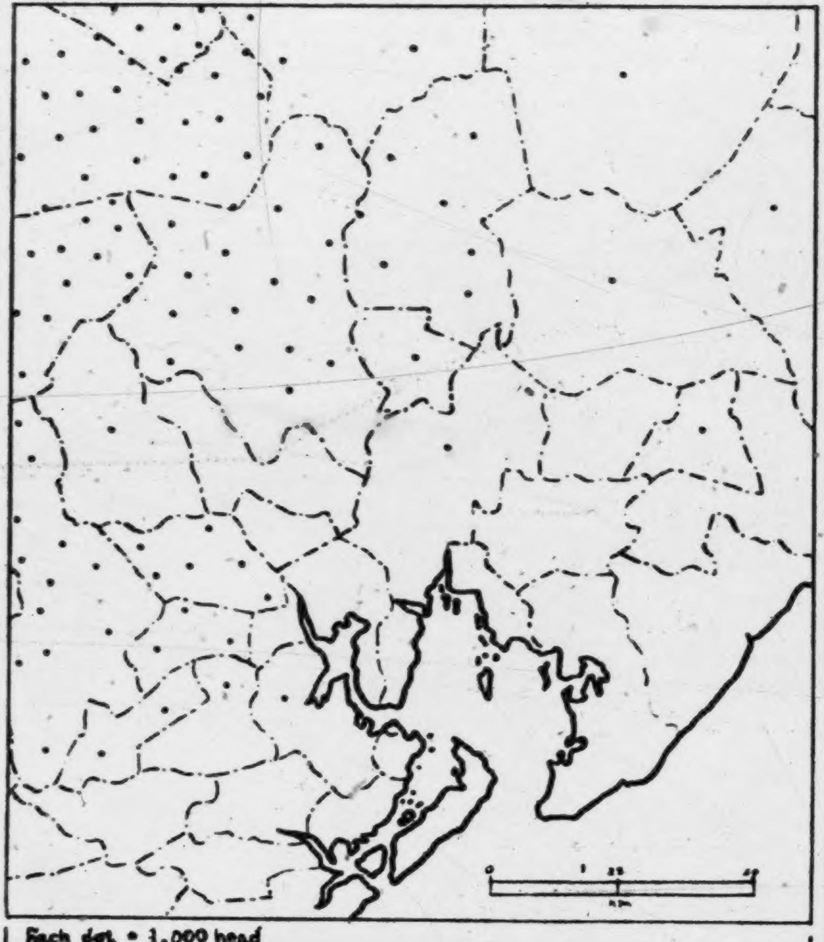

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RECONCAVO OF BAHIA

Goats--1948

Source of data: "População Pecuária, Em 31/12/1948."

MAP 82

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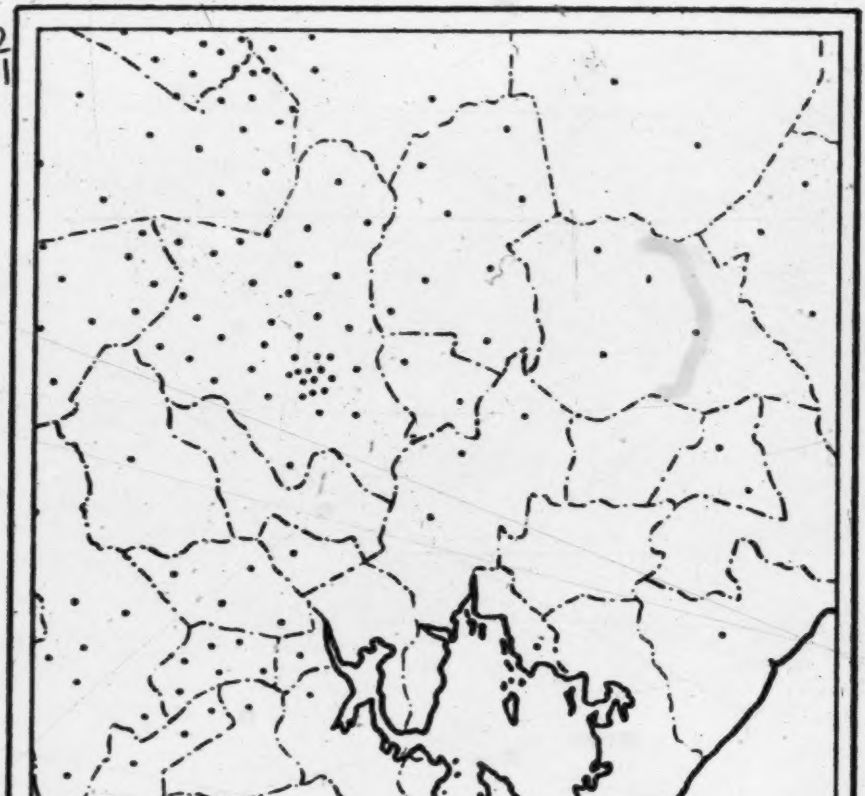

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RECÔNCAVO OF BAHIA

Sheep--1948

Source of data: "População Pecuária, Em 31/12/1948."

MAP 83

231 Summary--Livestock Produced for Animal Products. Except for the oxen, all the animals discussed above are raised for meat or for other animal products rather than for use as beasts of burden. The distribution of these animals, without regard to kind, is summarized on the accompanying map of non-work animals (Map 84).

Feira de Santana has the outstanding concentration of these non-work animals in the Recôncavo and, undoubtedly, in Bahia. To a considerable degree this concentration signalizes the importance of the sertão as a producer of livestock and of the Recôncavo as a consumer, since many of the animals around Feira de Santana are transients moving from the former to the latter. The principal market served by
[443] Feira de Santana is the city of Salvador, but the rural areas of all the Recôncavo north of the Bay and the estuary of the Rio Paraguaçu also secure much of their livestock through the campo de gado at "Feira."

The only other concentration of livestock raised for animal products is in the Southwestern Recôncavo. Most of these animals are
[433] used to feed the large local population within the sub-region, which seems to be relatively self-sufficient as far as livestock production is concerned.

231 Asses and Mules. Asses and mules combined are the most numerous
492 and widely distributed work animals in the Recôncavo. There were in 1948 about 115,000 of these two animals in the region (Map 85). Over one-half were found in Feira de Santana, where they are raised locally in large numbers and where animals brought from the Sertão are conditioned for sale. The asses and mules of the Recôncavo are both very small animals and are generally used as burden carriers, although the larger mules--still very small by United States standards--are used as riding animals.

[TEXT CONTINUED ON PAGE 285]

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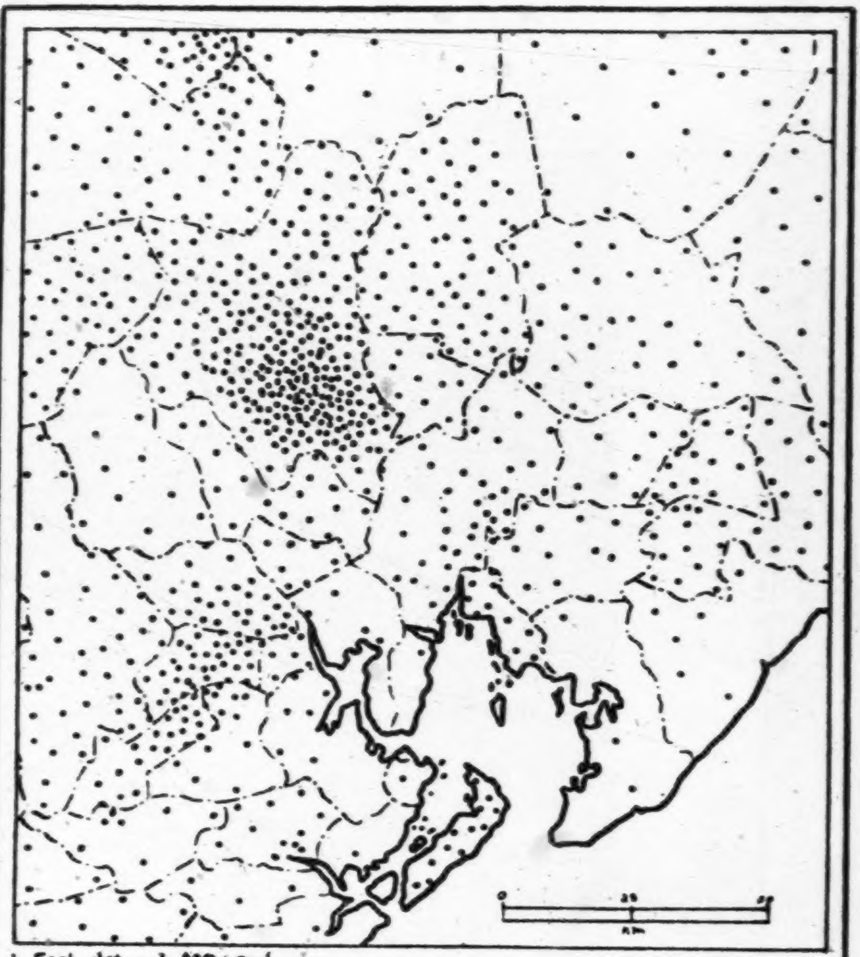

Each dot = 1,000 head

RECÔNCAVO OF BAHIA

Total Animals Produced for Animal Products--1948

(Non-work Animals)

MAP 84

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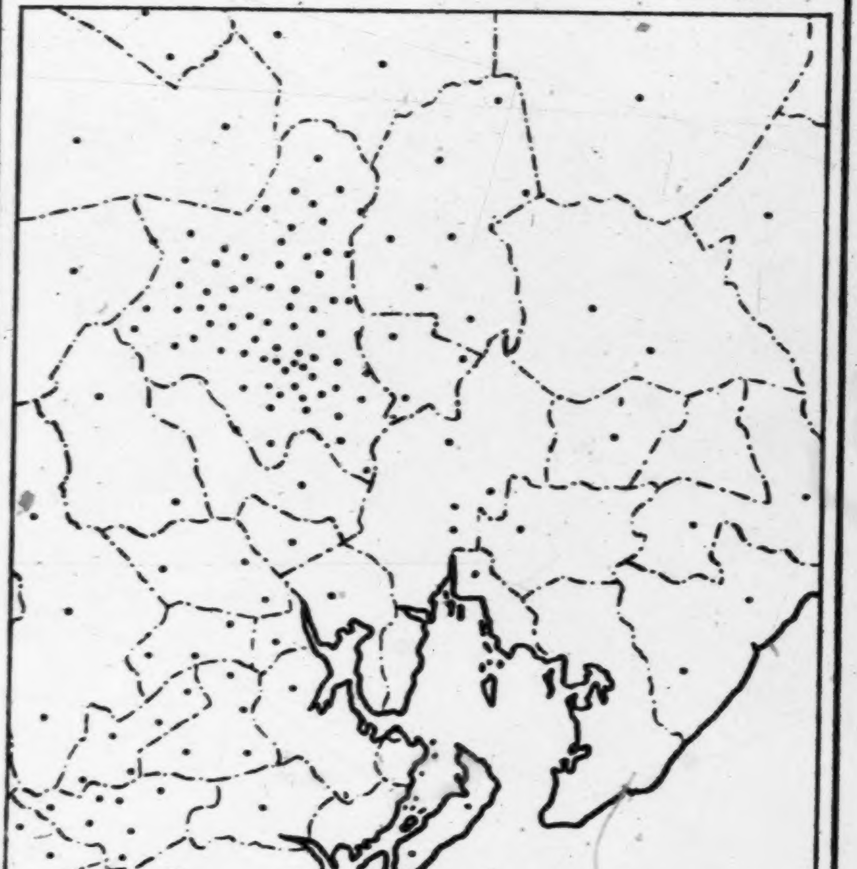

Each dot - 1,000 head

RECONCAVO OF BAHIA

Asses and Mules—1948

Source of data: "População Pecuária, Em 31/12/1948."

MAP 85

231 492 Asses and mules were the second most numerous animals in an area from São Gonçalo and Feira de Santana to Camassari--a zone which roughly corresponds to the northern part of the tobacco-manioc region. In this part of the crop region cultivation is more scattered and road transportation less well developed than in the Southwestern Recôncavo, and presumably the animals are needed to pack the tobacco crop to the markets.[6]

Work Animals. The work animals of the Recôncavo include oxen, horses, asses, and mules. As the accompanying map demonstrates (Map 86), the chief concentration of all work animals, without regard to type, was around Feira de Santana, the supply center for the region. Many of these animals were young or were being conditioned for market. On the other hand, most of the work animals of the smaller concentration in the sugar cane region were actually in use.

According to the official data, the total number of work animals in the Recôncavo increased from 85,000 to 215,000 between 1940 and 1948. Almost certainly there has been a strong increase, but such a tremendous rise in work animal population seems excessive; probably the 1940 total is too low, and perhaps the 1948 figure is excessive, though in view of the number of animals which are evident in the Recôncavo, not very much so.

231 Conclusion. Although the Recôncavo produces a moderate number of livestock of all types--except horses, asses, and mules--it has a great and continuing deficit. The livestock deficiencies of the region are supplied by the sertão in a movement of animals which had its inception in the initial century of colonization. Associated with the exchange 231 438 of animals from the sertão for products from the littoral is one of the historic institutions of the Northeast--the campo de gado of

[TEXT CONTINUED ON PAGE 287]

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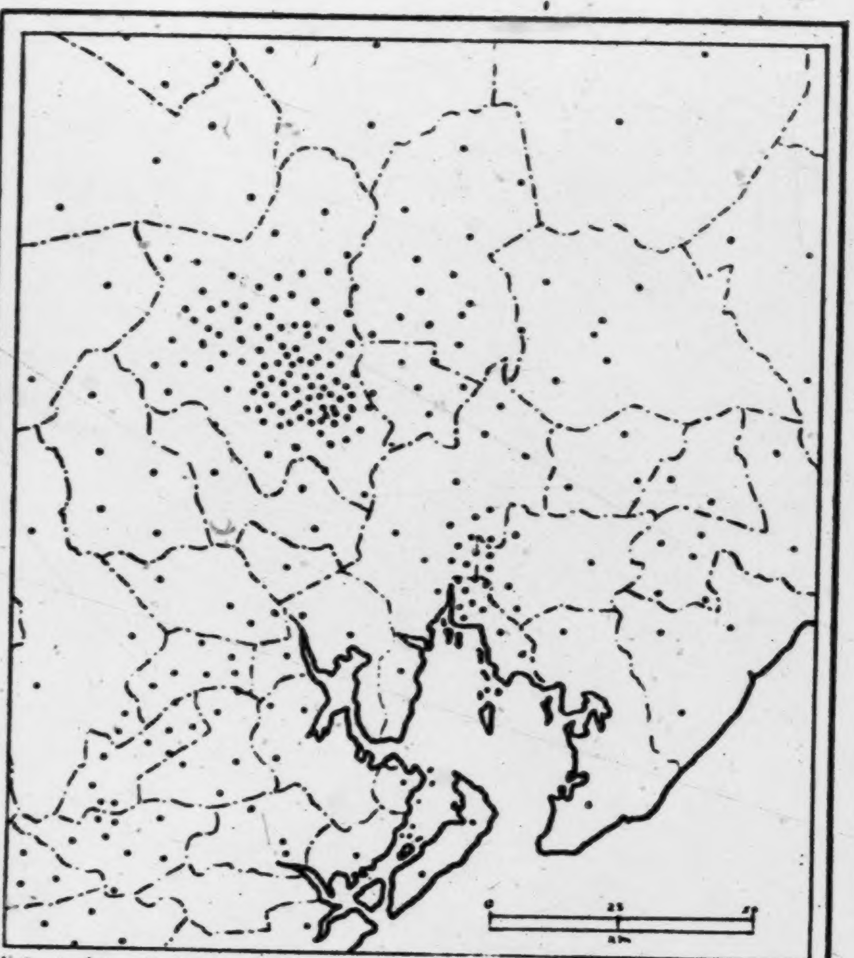

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RECONCAVO OF BAHIA

Work Animals--1948

MAP 86

BB 231 438 Feira de Santana. From "Feira" the livestock are distributed to the Recôncavo to be used as beasts of burden, as food, or for both.

BB 231 The livestock population of the Recôncavo, as well as the livestock market, is centralized within the município of Feira de Santana. [433] In part this concentration reflects the relatively great demand for beef in Salvador, so that at any one time the number of livestock passing through Feira de Santana must be great. The same concentration is evident for work animals. This suggests that the mortality of work animals in the Recôncavo must be very high. There is no data to substantiate this hypothesis, but the emaciated appearance, poor diet, and calloused treatment of beasts of burden in the Recôncavo suggest that it is highly probable.

BB 231 241 433 The concentrations of livestock in the sugar cane and tobacco-manioc regions contribute significantly to the general agricultural importance of these areas. The differences in the character of the livestock populations reflect in a large measure the different requirements of the crop cultivation systems of the two regions.

B 231 241 The interdependence of the livestock-producing sertão and the areas of cultivation, signalized by the cattle fairs, is a characteristic feature of Brazilian agricultural life. The interior, from Ceará to Rio Grande do Sul, is a reservoir from which are drawn the cattle and the work animals for the main centers of crop cultivation and for the cities.

000 Footnotes - Chapter VII

[436] [1] The approximate value of the cruzeiro at the time these data were compiled by the government was five cents.

[127] [2] The basic sources for data on livestock populations used in the following discussion were: (1) Ministério da Agricultura, Serviço de Estatística da Produção, "População Pecuária, Em 31/12/1948," pp. 1-8; (2) Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

[3] Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

[4] The use of the term "milk shed," generally applied to the tremendous movement of milk into the highly urbanized centers of the United States and western Europe, is somewhat inappropriate for the small-scale operations in Bahia. However, the essential elements are the same: the movement from countryside to urban places of fluid milk for home consumption.

[127] [5] Anuario Estatística do Brasil--1953 is used as a source of 1952 data on the livestock population of the state of Bahia in this and the following discussion.

[491] [6] Although there are trunk highways through São Gonçalo and Feira de Santana, the back country of each is remote from the cidade and the highway.

CHAPTER VIII

AGRICULTURAL PROPERTIES

241 231 423 311 The agricultural properties of the Recôncavo are diverse in functional type, tenure, and size. In most municípios there are to be found three basic production types: crop cultivation units, mixed crop cultivation and livestock producing units, and ranches. The properties of any local area may be owner or administrator operated, rented, or, in some areas, occupied informally by "squatters." In distinction to most agricultural areas of the United States, the Recôncavo has a very large number of extremely small agricultural properties, frequently with less than 2 hectares. There are also a number of large properties with more than 10,000 hectares; and in many areas large and small properties are closely intermixed.

241 423 184 Despite the widespread diversity of agricultural properties, there are distinct regional patterns which are based upon the predominance of certain types and sizes of properties and upon characteristic modes of possession. The regional patterns of agricultural properties correspond in a general manner to the crop regions delineated in the previous discussion.

241 423 [127] [198] The basic source of information about the agricultural properties of the Recôncavo is the 1940 economic census.[1] No more recent source is as yet available to replace or to verify or correct these fifteen year old data. However, generalizations based upon these data were substantiated in most cases by the field investigations undertaken for the present study. It is apparent that in so traditional a region as the Recôncavo, the institutional characteristics of agriculture, property types included, change very slowly.

241 423 127 311 Of the 12,500 square kilometers of the Recôncavo, only about 800,000 hectares were enumerated in the agricultural section of the 1940 economic census--71 per cent of the total land area. In the various municípios of the region, the enumerated area varied from 39 per cent of the land surface in Alagoinhas to 110 per cent in Itaparica (Map 87). In a few cases, such as Itaparica, the area given in the agricultural section of the census exceeded the official total area of the município.[2] Where the political boundaries were not delimited precisely, properties may have been credited to the wrong município. More probably, however, these situations result from the over-estimation of the areas of individual properties--precise surveys of agricultural properties are virtually unknown.

There was a general correspondence between the intensity of land use (Map 2) and the relative area included in the 1940 agricultural census. This latter area will be referred to as "enumerated area" in the following discussion. Those lands not included in the agricultural census were urban areas, public domain, or in a few cases, private land held for speculation. However, not all of the unenumerated land was unused from the agricultural point of view, for in some of the less densely settled areas "squatters" are quite common.

241 231 423 311 Production Types of Agricultural Enterprises. In the 1940 census the agricultural properties of Brazil were divided into six classes, based in part upon the type of production and in part upon the scale of operation. The three main functional types were agricultura (crop cultivation), agro-pecuária (crop cultivation with livestock production), and pecuária (livestock production). In this context it is important to note that while agro-pecuária may include mixed agriculture--in the sense of functionally interdependent crop and livestock production

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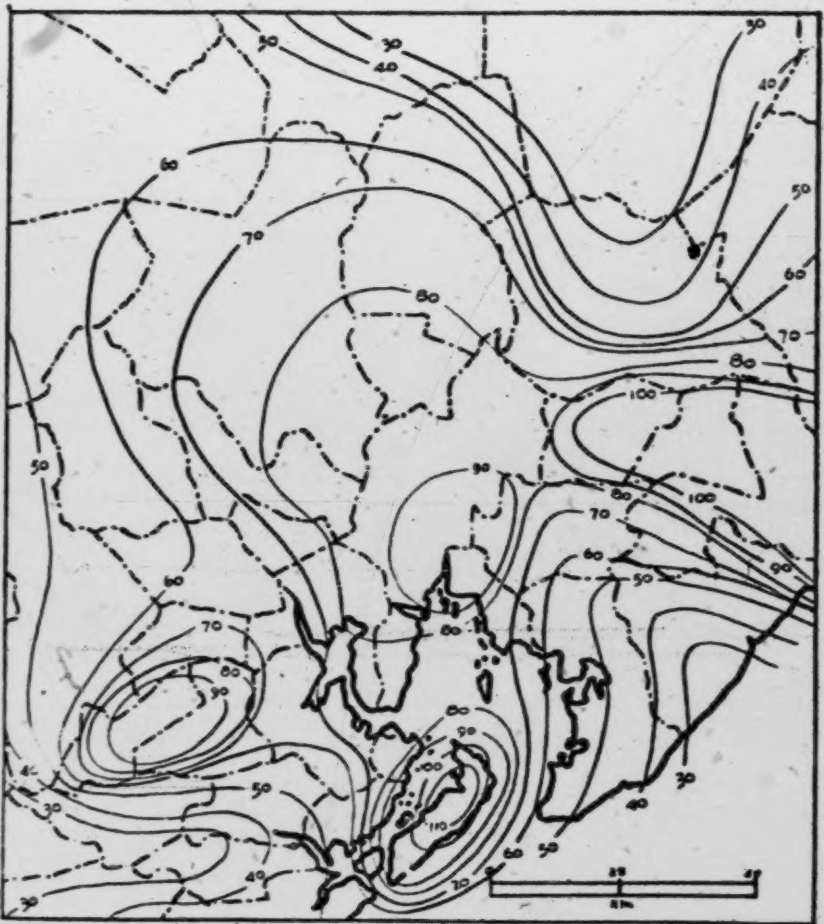
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RECÔNCAVO OF BAHIA

Per cent of the Total Land Area Enumerated

in the 1940 Agricultural Census

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 87

241 231 423X 311 within the individual agricultural unit--properties classifed within the group may have merely co-existing crop and animal production. In the Recôncavo, cultivation and animal husbandry are carried on separately within the individual properties, except (1) where labor animals are involved, or (2) where manure for tobacco cultivation is produced on a tobacco-growing farm. Each of the three main production types was classified as either a large-scale or a small-scale unit, on the basis of the amount of cropland, the number of animals, or both.[3] The distribution of the 27,513 agricultural properties and the 837,699 hectares of enumerated land of the Recôncavo among the various production and scale-of-operation classes is shown on the accompanying table (Table XIV).

Most of the agricultural properties of the Recôncavo were small-scale units which were engaged solely in crop cultivation or which produced both crops and livestock. Ninety-nine per cent of all properties, encompassing 58 per cent of the farmland, were small-scale units. The number of cultivation and of mixed cultivation-livestock units was approximately the same; the mixed units were, on the average, more than twice as large as the exclusively crop producing units. Although the number of purely livestock producing units--ranches--was small, the total area which they encompassed was relatively large, and the mean size of individual units was over 450 hectares. Even more notable is the fact that less than 250 large-scale livestock units, about 1 per cent of the total number of units, held 13 per cent of the land in agricultural properties.

231 233 Livestock Units. Agricultural enterprises whose activities were confined exclusively to livestock production were found in every município of the Recôncavo and in every adjoining município in 1940. In most areas, however, the number of such livestock units was very

[TEXT CONTINUED ON PAGE 294]

231 small (Map 88). Within the Recôncavo, only the eastern part of the
233 Central Recôncavo and the environs of Feira de Santana had even a
moderate number of ranches. Livestock enterprises generally occupied
less than one-fifth of the enumerated area (Map 89). These properties
were relatively important in the Northwestern and Central Recôncavo,
a reflection of the importance of ranching and cattle fattening in the
northwest and of the need for work animals in the sugar cane region. In
the Southwestern Recôncavo crop cultivation is too intensive and wide-
spread to share the land with many ranches. Except in the southwest,
20 per cent of the total enumerated area was in livestock units along
the limits of the Recôncavo. In relation to the total area, the extent
[311] of livestock properties varied from place to place along the border
zone (Map 90). Beyond the Recôncavo, ranching is more important in
the crystalline areas, whether caatinga or agreste, than in the Tertiary
taboleiros.

231 As has been pointed out, large-scale properties are especially
233 important among the livestock production units. In most parts of the
433 Recôncavo the ratio of the area in large-scale and in small-scale live-
stock units was about three to one. The analysis of the mean size of
large-scale livestock units, plotted on Map 91, emphasizes the diversity
within the region and discloses the tremendous size of the ranches in
the coastal agreste northeast of the Recôncavo. Since the number of
large-scale livestock units was small and the size of the units highly
variable, the mean values for the areas of these properties may be
deceiving. Nevertheless, it is significant that the mean size of live-
stock unit was large in the Central Recôncavo, where there are a number
[313] of fazendas in the forested hills around the sugar cane region. These
[249] properties are used primarily as sources of firewood for the usinas

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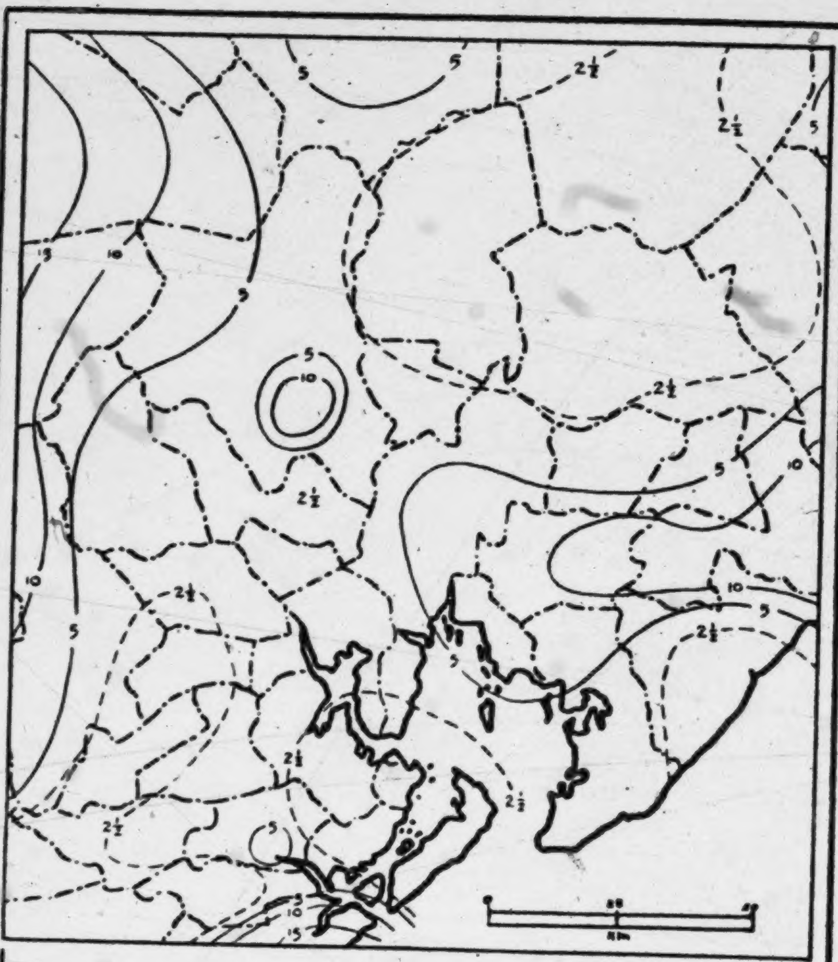
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RECÔNCAVO OF BAHIA

Per cent of All Agricultural Enterprises Which Were Livestock Enterprises--1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 88

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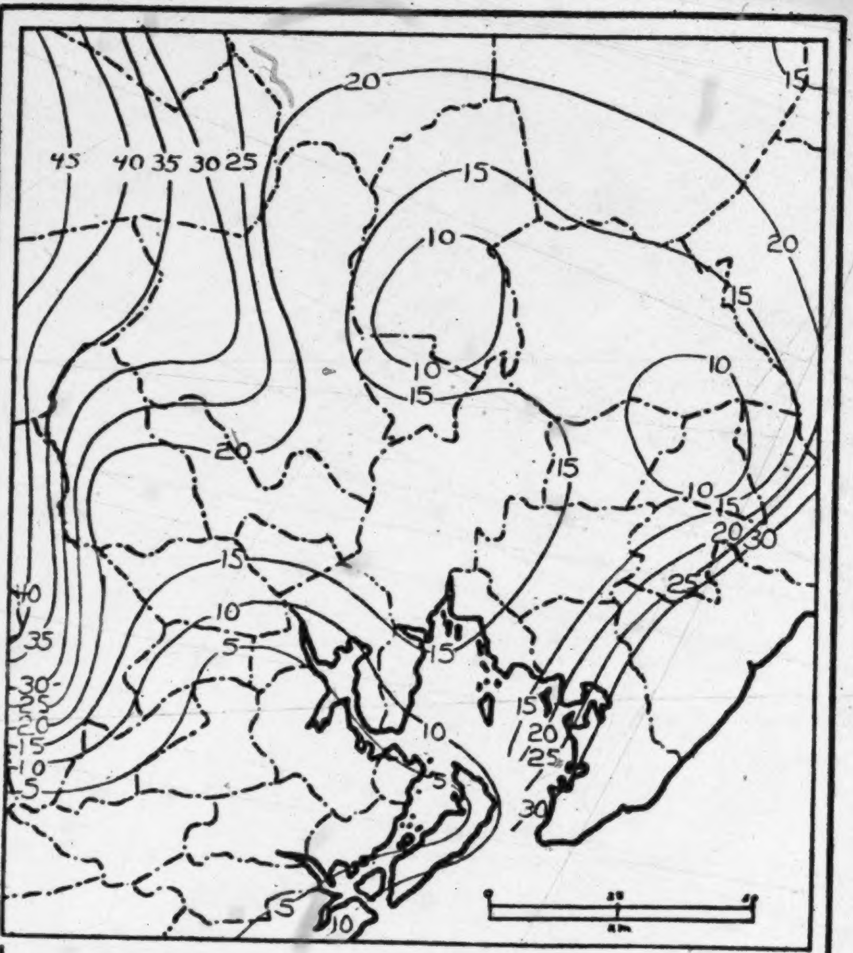
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RECÔNCAVO OF BAHIA

Per cent of the Enumerated Area in

Livestock Enterprises—1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 89

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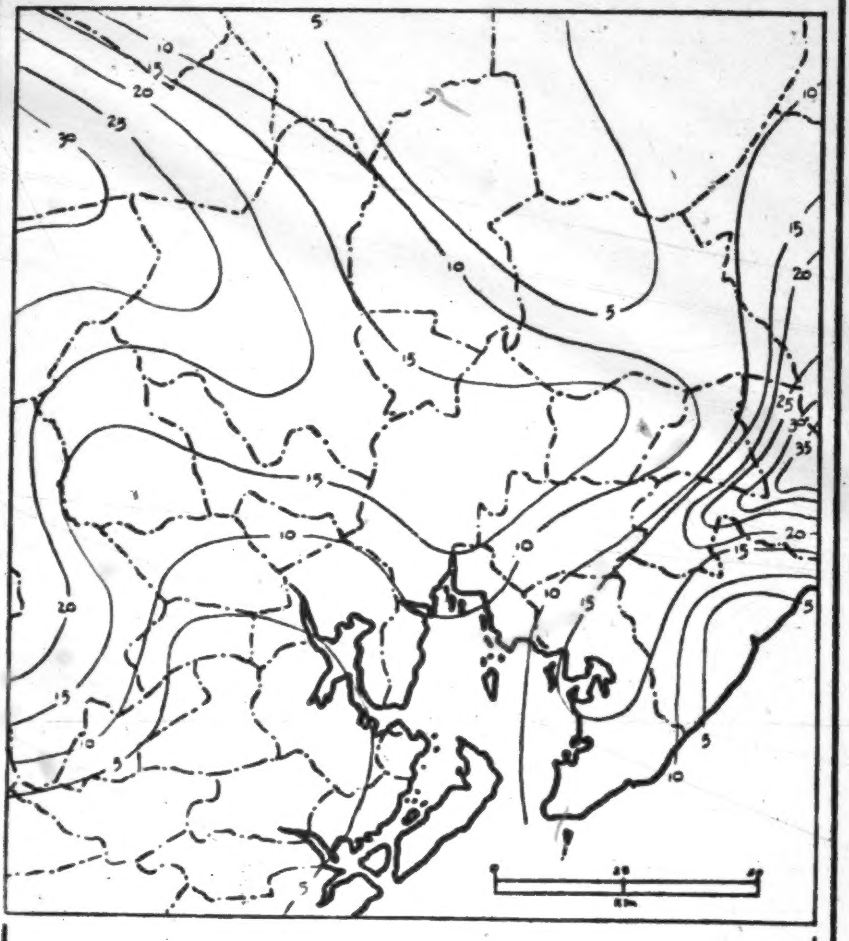

RECÔNCAVO OF BAHIA

Per cent of the Total Land Area in

Livestock Enterprises--1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 90

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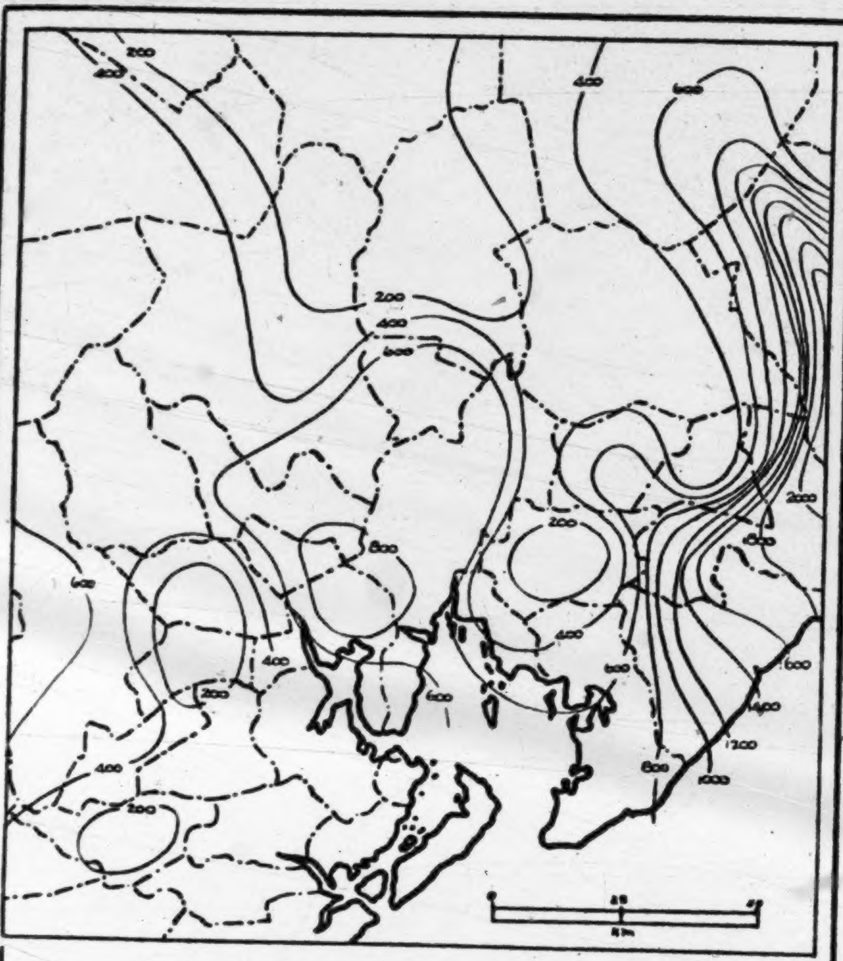
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RECÔNCAVO OF BAHIA

Mean Size of Large-Scale Livestock Enterprises—1940

In Hectares

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 91

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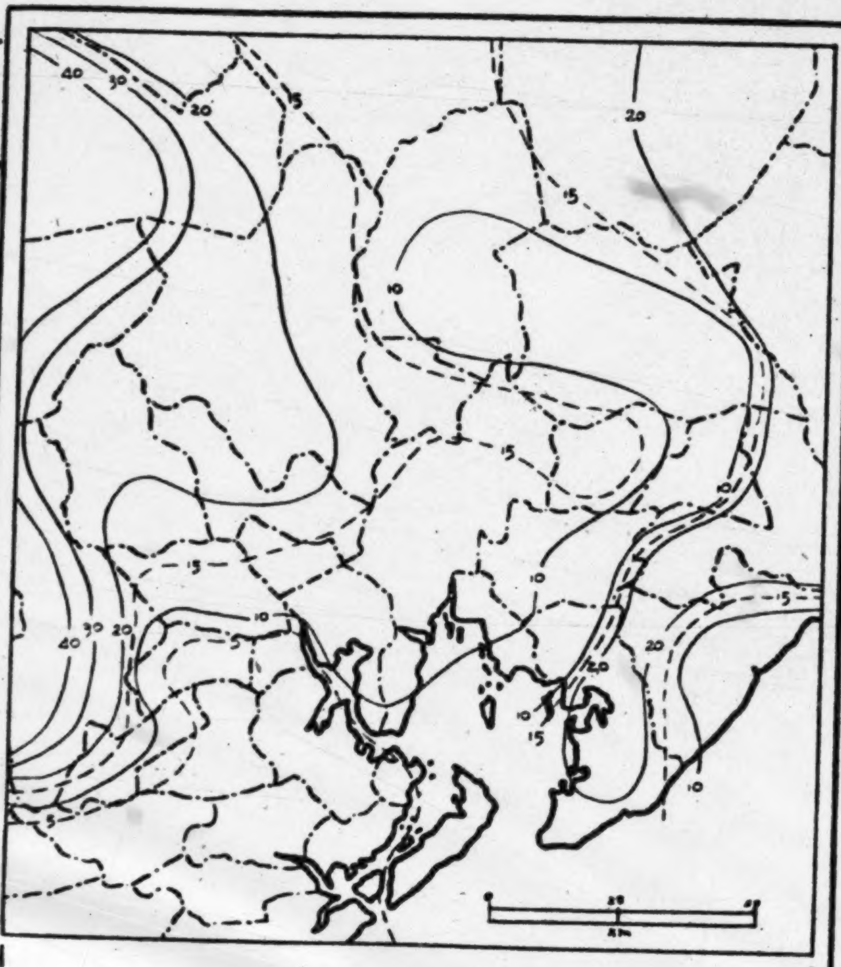

RECÔNCAVO OF BAHIA

Per cent of the Enumerated Area in

Large-Scale Livestock Enterprises—1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 92

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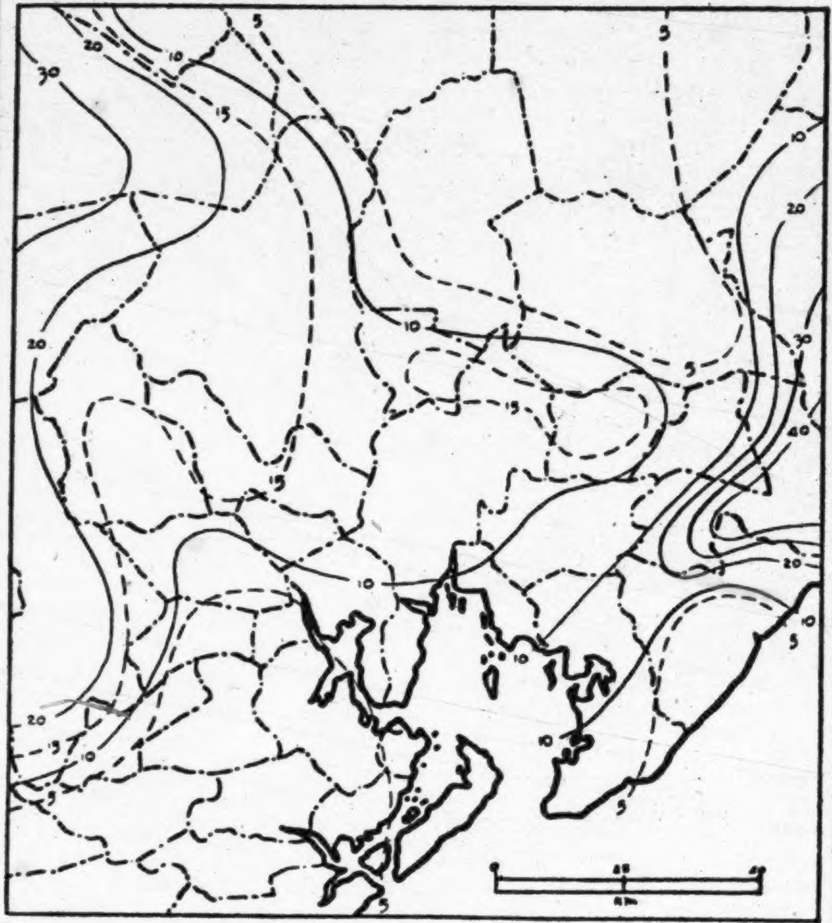
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RECÔNCAVO OF BAHIA

Per cent of the Total Land Area in

Large-Scale Livestock Enterprises--1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 93

231 233 and locomotives of the cane area, but, as has been pointed out previously,
433 [313] [249] they have supplementary livestock production.[4]

231 Of the 247 large-scale livestock units in the Reconcavo, 65, with
233 a total area of almost 30,000 hectares, were in the *município* of Feira de
311 Santana (Maps 92 and 93). Another 39, with about 16,000 hectares of
433 land, were in the Central Recôncavo. Each of these two areas has a distinctive character: the Central Recôncavo *fazendas de gado*--cattle ranches--supply oxen and horses, asses, and mules to the sugar economy; the large *fazendas* of Feira de Santana, with extensive grassy pastures, serve the *campo de gado*--cattle market--of the *cidade* and thereby the whole economy of the Recôncavo.

231 *Crop Cultivation Units*. Almost one-half of all farms in the
241 Recôncavo produced no animals in 1940. In the marginal areas of the
311 region, excepting always the southwest, less than one-third of the farms
184 were pure crop cultivation units (Map 94). On the other hand, crop farms were particularly numerous on the southern littoral, where the forests are not salutary to livestock--except swine and fighting cocks. The Northern Recôncavo, where ranching is not an important activity, had a relatively large number of crop cultivation units, as had Salvador and the adjoining coastal *município*, Camassari.

241 Relative to both the enumerated and the total area, the purely
311 crop cultivation units were very important in Itaparica and Santo Amaro and unimportant around the border zone of the Recôncavo (Maps 95 and 96). On Itaparica and in the sugar cane region, crop cultivation units occupied over one-half the total land area--over 85 per cent on the island of Itaparica. The size of crop cultivation properties in the Recôncavo was generally small, but there were very great local differences
000 (Map 97). The tobacco-manioc region, especially in the Southwestern

[TEXT CONTINUED ON PAGE 306]

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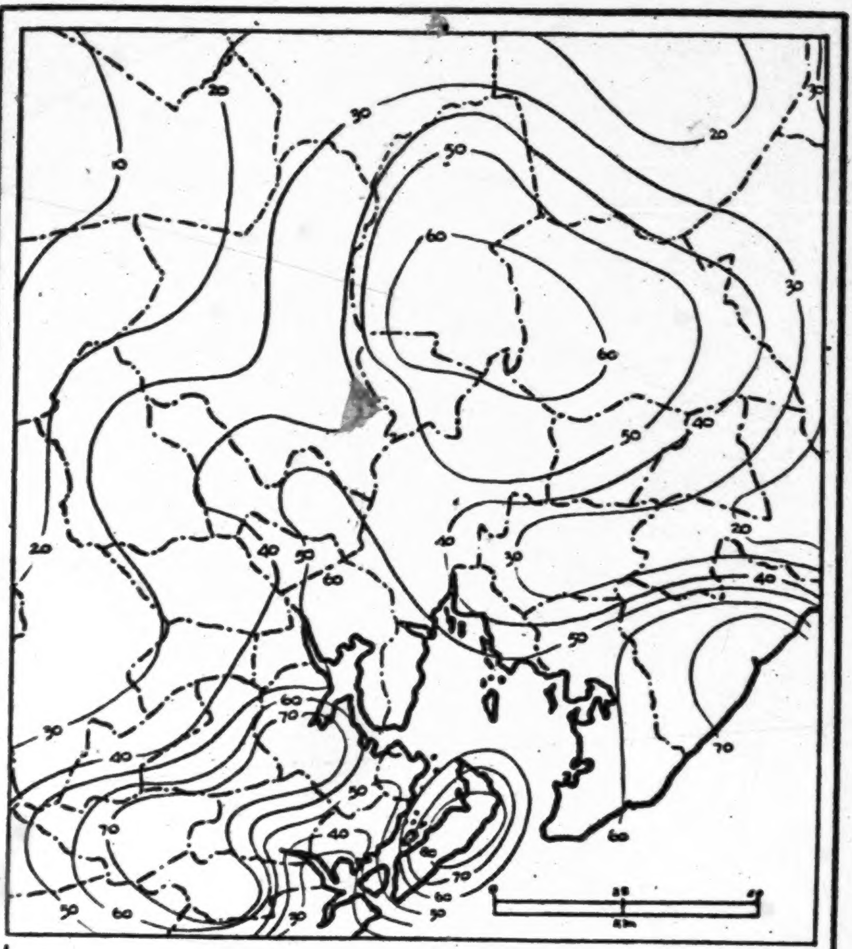
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RECÔNCAVO OF BAHIA

Per cent of All Agricultural Enterprises Which Were Crop Cultivation Enterprises--1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 94

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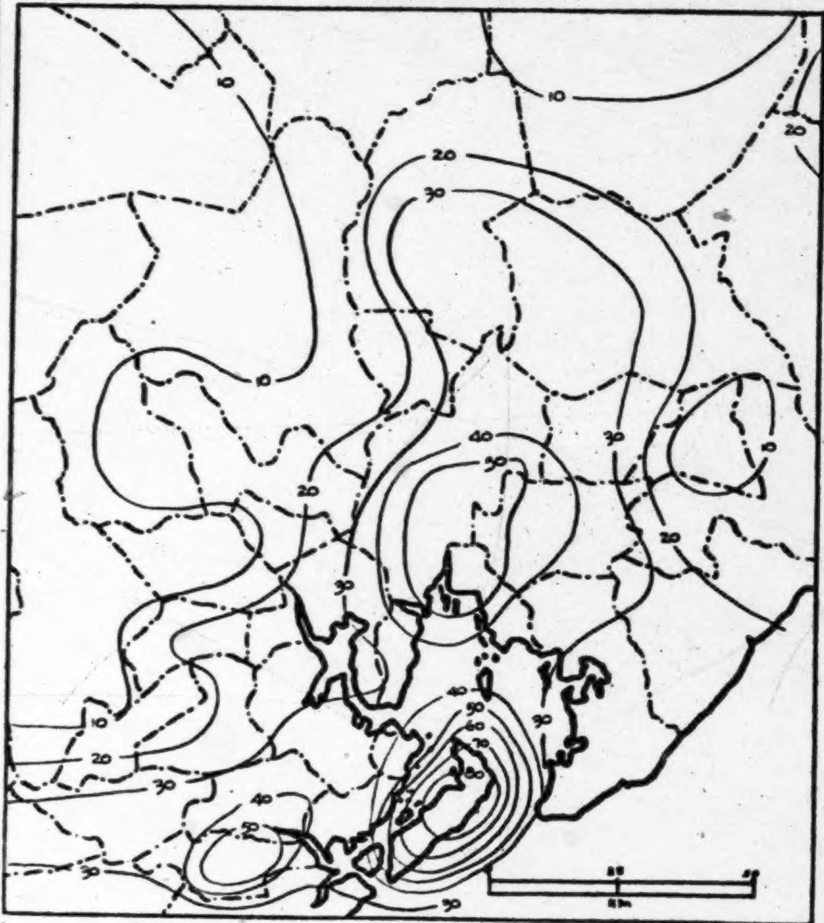
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RECÔNCAVO OF BAHIA

Per cent of the Enumerated Area in

Crop Cultivation Enterprises--1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 95

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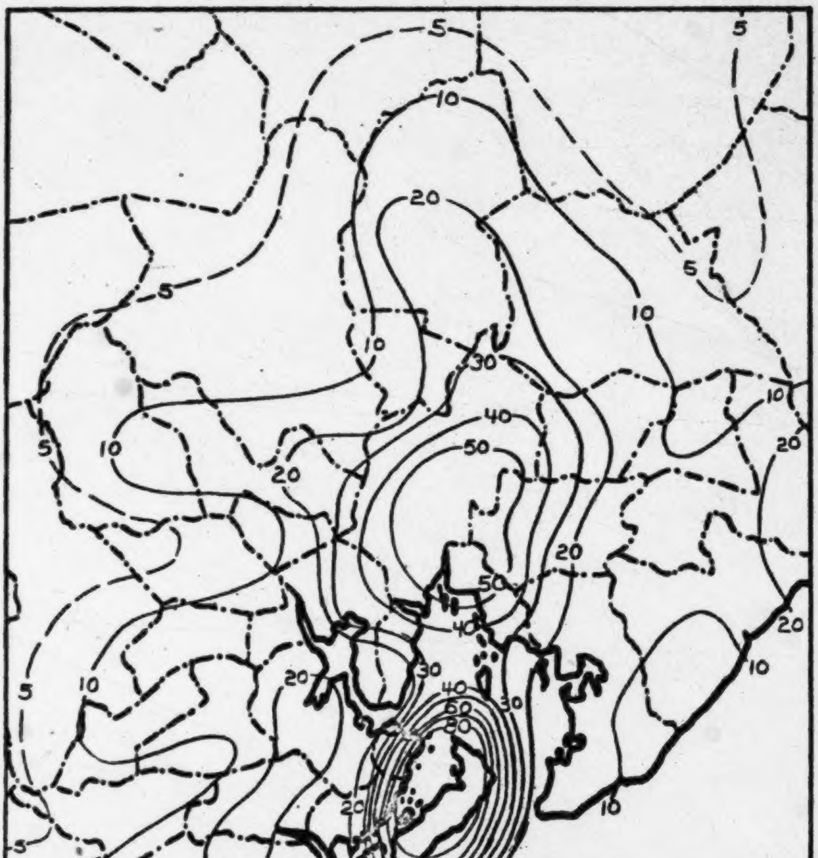

RECÔNCAVO OF BAHIA

Per cent of the Total Land Area in

Crop Cultivation Enterprises—1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 96

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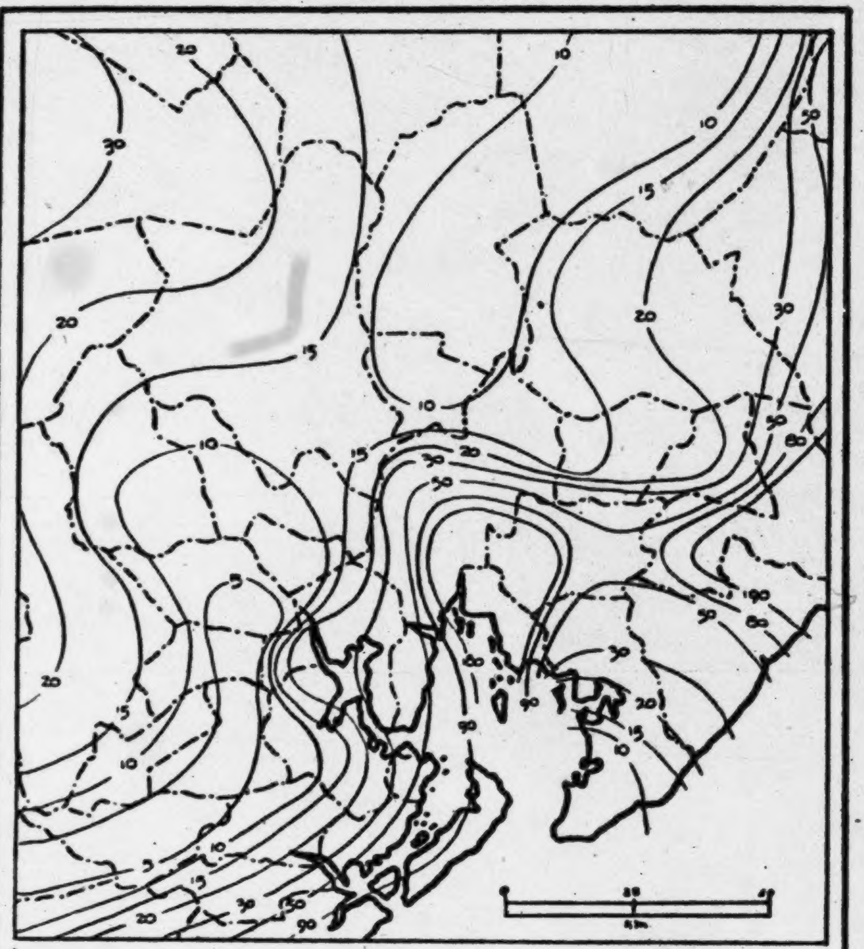
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RECÔNCAVO OF BAHIA

Mean Size of Crop Cultivation Enterprises—1940

In Hectares

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 97

249 244 311 423 The tobacco-manioc region, especially in the Southwestern Recôncavo, was a zone of very small properties--in Cruz das Almas and Coração de Maria the mean size of crop cultivation units was 9 hectares, while in São Filipe it was only 5 hectares. This zone of small crop cultivation units is part of a belt, parallel to but well back from the coast, which originates in the serras of the coffee zone, crosses the Recôncavo along the caatinga-mata transition, and follows the caatinga-agreste boundary northward along the eastern edge of the Tertiary taboleiros. The small-property belt thus lies between the littoral, with its large plantations of sugar cane and its ranches, and the dry sertão, with its extensive livestock economy.

241 249 311 423 The Central Recôncavo was a zone of large crop cultivation properties, primarily sugar cane plantations. Although there are a large number of livestock in the sugar cane region, the plantations use, rather than produce, animals and were thus classified as crop cultivation units. The plantations of the sugar cane area are very diverse as regards size, and many of the individual properties are now operated collectively by large usinas. Nevertheless, there are still a number of small properties, producing cane which is sold to the large mills.

241 231 233 311 Mixed Crop Cultivation-Livestock Producing Units. A little over one-half of all the farms in the Recôncavo produced livestock as well as crops. These units occupied almost 60 per cent of the total area of all properties. However, the area in which over half the properties were mixed units was limited to a broad perimeter zone which included all the outer municípios of the Eastern, Northwestern, and Southwestern Recôncavo (Map 98). In Itaparica and Santo Amaro, where crop cultivation units were very important, there were relatively few mixed units.

244 249 231 233 The maps of the area in mixed units in relation to enumerated area (Map 99) and total area (Map 100) confirm the observation that.

[TEXT CONTINUED ON PAGE 311]

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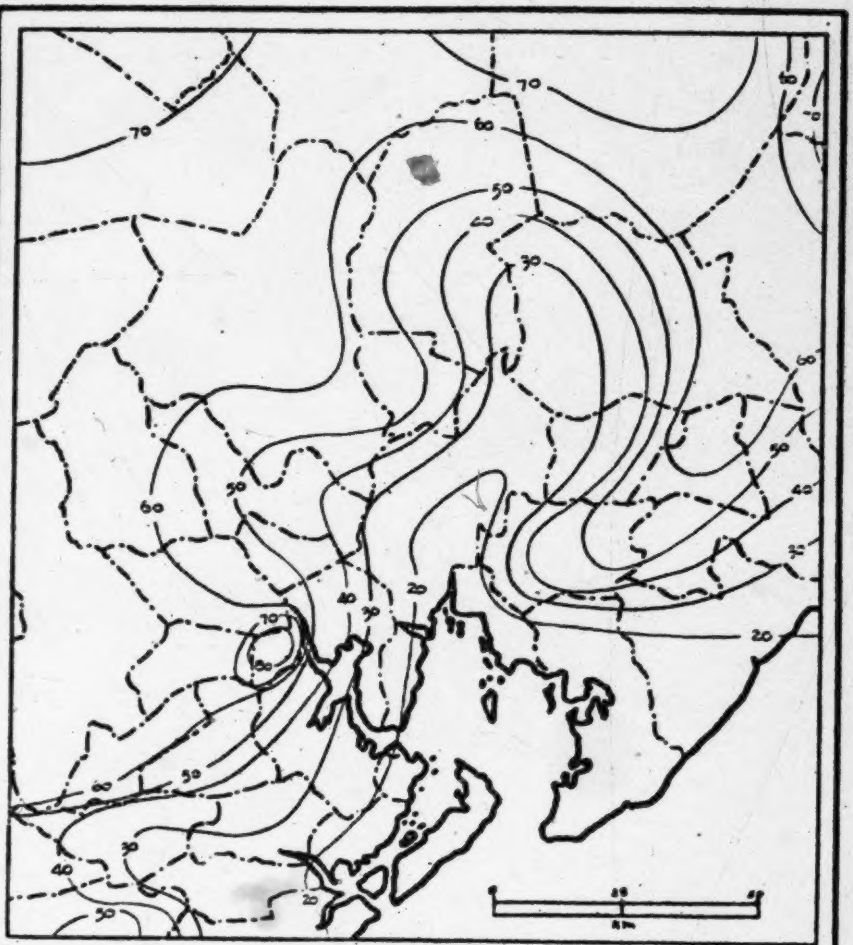
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RECÔNCAVO OF BAHIA

Per cent of All Agricultural Enterprises Which Were Crop-Livestock Enterprises--1940

Source of data: Recenseamento Geral do Brasil 1940. Censos Econômicos, Bahia, Vol. II.

MAP 98

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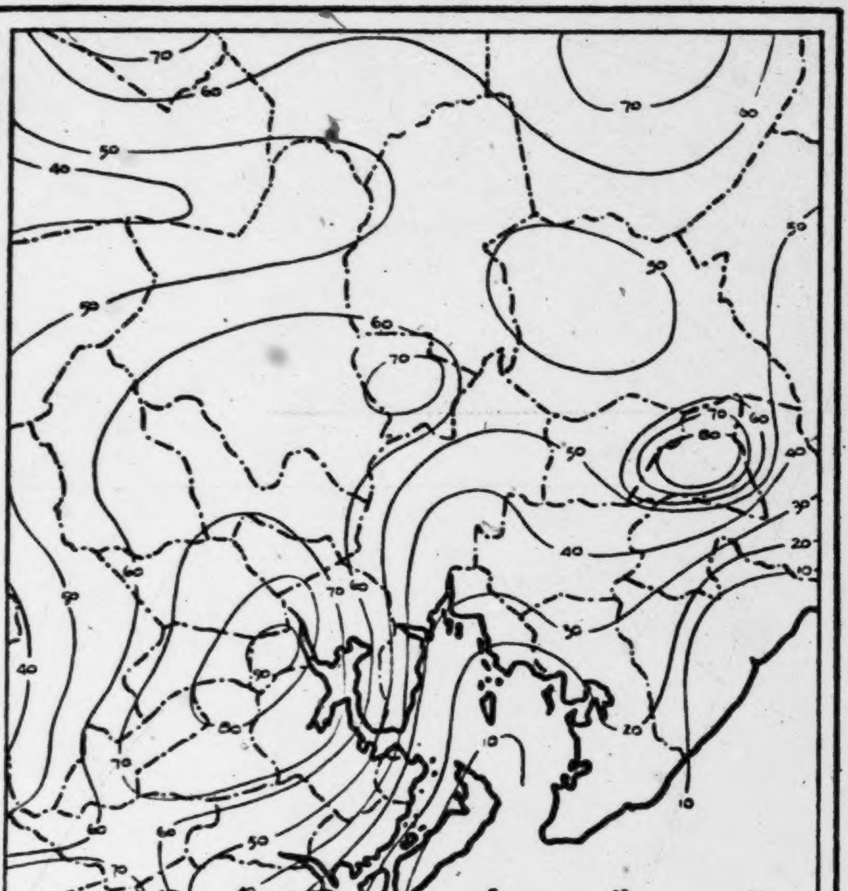
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RECÔNCAVO OF BAHIA

Per cent of the Enumerated Area in

Crop-Livestock Enterprises--1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 99

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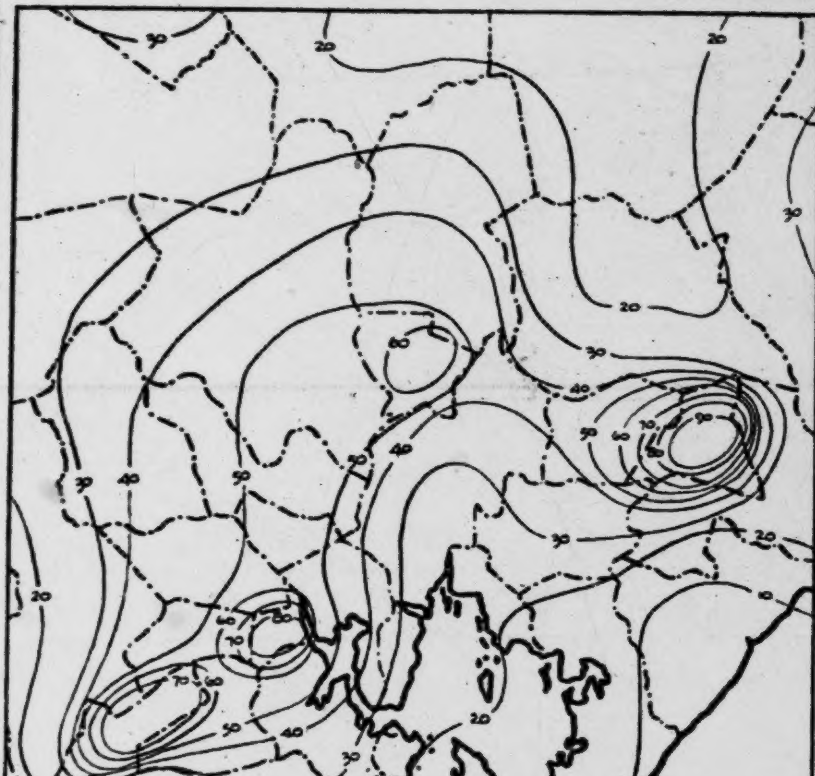
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RECÔNCAVO OF BAHIA

Per cent of the Total Land Area in

Crop-Livestock Enterprises--1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 100

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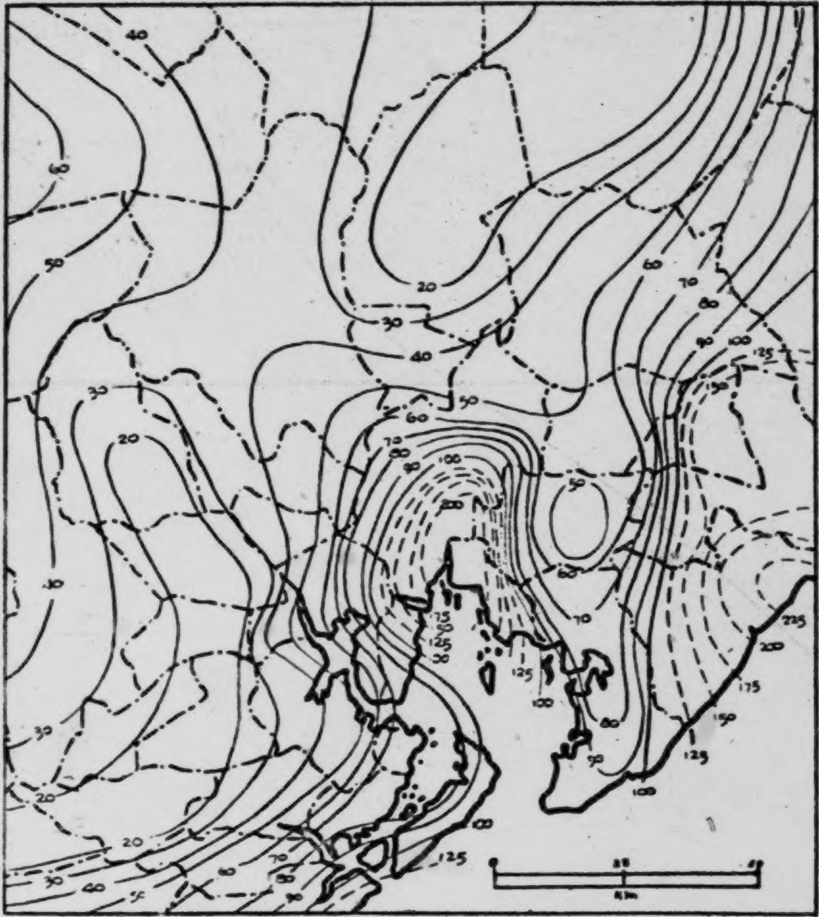
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RECÔNCAVO OF BAHIA

Mean Size of Crop-Livestock Enterprises—1940

In Hectares

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 101

244 249 the tobacco-manioc region is an area of co-existing crop and livestock
231 production. The mean size of mixed units of both the tobacco-manioc
233 region and the western and northern perimeter of the Recôncavo was
[423] small—20 to 40 hectares—but was significantly larger than the mean
[311] size of crop farms in the same areas (Map 101). Like the purely cane-producing plantations, the mixed units of the Central Recôncavo were relatively large.

241 Crop Cultivation and Mixed Crop Cultivation and Livestock Producing Units Combined.
231 232 The distribution of the area in crop and crop-
311 livestock units combined, as shown on Maps 102 and 103, reaffirms the regional distinctiveness of the Recôncavo. In almost the entire region over one-half the total area was in these two types of crop-producing properties. None of the adjoining municípios had as much as 50 per cent of their total area in these two types of units, and in all but three, less than one-third the land was in crop or crop-livestock properties.

241 Regional Pattern of Agricultural Properties. The distribution
311 of the three major production units is summarized on Map 104. In each
184 [231] of the two basic regions—crop and crop-livestock—one production
[233] type dominated, in number and in area, over the others. The Central Recôncavo with the island of Itaparica and, beyond the Recôncavo, the environs of Nazaré composed a region in which most of the agricultural land was in crop cultivation units. North of the Bay, most of these crop cultivation units were sugar cane plantations. On Itaparica there were several kinds of crop cultivation units—coconut plantations, diminutive manioc farms, and across from Salvador, small summer estates with a few cultivated fields. Around Nazaré most of the crop cultivation properties appeared to specialize in the production of manioc.

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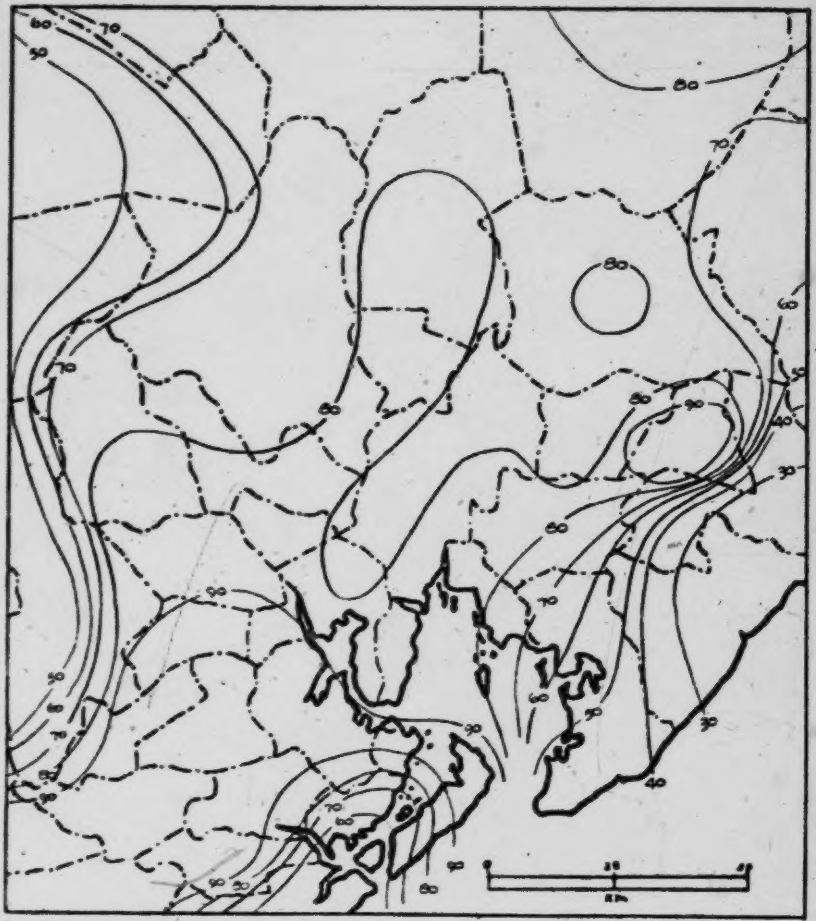
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RECÔNCAVO OF BAHIA

Per cent of the Enumerated Area in

Crop Cultivation and Crop-Livestock Enterprises--1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 102

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TABLE XIV

AGRICULTURAL PROPERTIES OF THE RECONCAVO--CLASSIFIED BY TYPE AND SCALE OF OPERATION--1940

	Crop Cultivation Only	Crop Cultivation and Livestock Production	Livestock Production Only	All Types
	Number and Area of Properties			
All Properties:				
Number	13,221	13,587	705	27,513
Area*	212,545 ha.	493,210 ha.	131,944 ha.	837,699 ha.
Mean Size	16 ha.	36 ha.	187 ha.	30 ha.
Small-Scale Properties:				
Number	13,144	13,558	458	27,160
Area	167,406 ha.	298,408 ha.	26,932 ha.	483,746 ha.
Mean Size	13 ha.	21 ha.	59 ha.	18 ha.
Large-Scale Properties:				
Number	77 ha.	29 ha.	247 ha.	353 ha.
Area	28,703 ha.	12,649 ha.	107,199 ha.	148,551 ha.
Mean Size	373 ha.	436 ha.	434 ha.	421 ha.
	As Per cent of the Number and Area of all Properties			
All Properties:				
Number	48	49	3	100
Area	25	59	16	100
Small-Scale Properties:				
Number	48	49	2	99
Area	20	35	3	58
Large-Scale Properties:				
Number	-	-	1	1
Area	3	1	13	18

---

*Because the census does not give data on the size of some units in order to preserve the anonymity of the information, the totals do not precisely equal the sums of the various components.

Source: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

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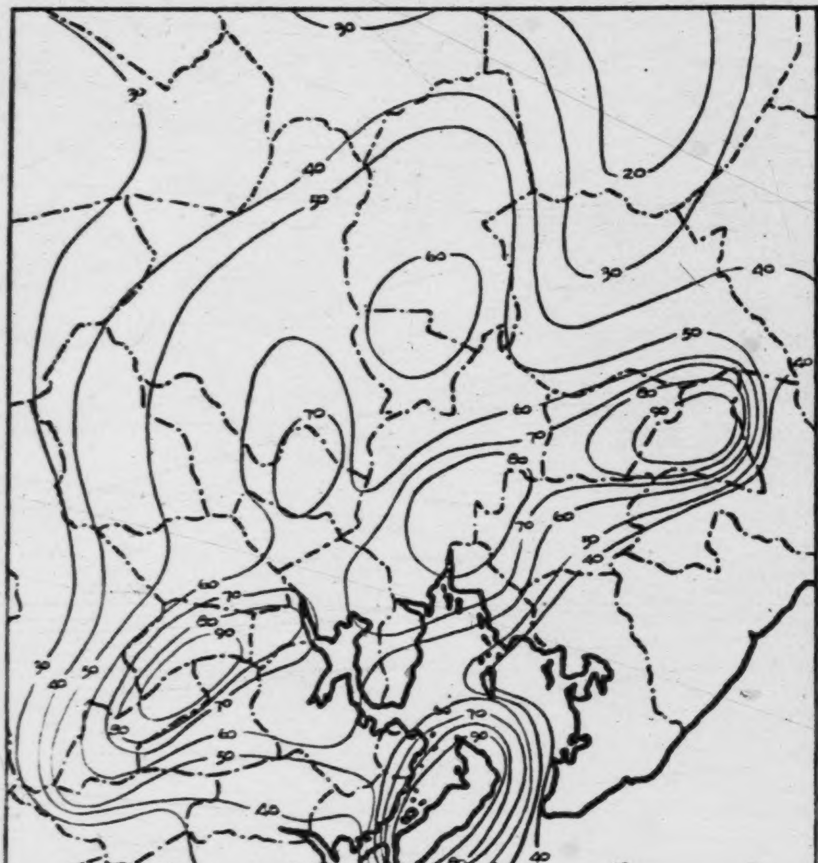
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RECÔNCAVO OF BAHIA

Per cent of the Total Land Area in

Crop Cultivation and Crop-Livestock Enterprises--1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 103

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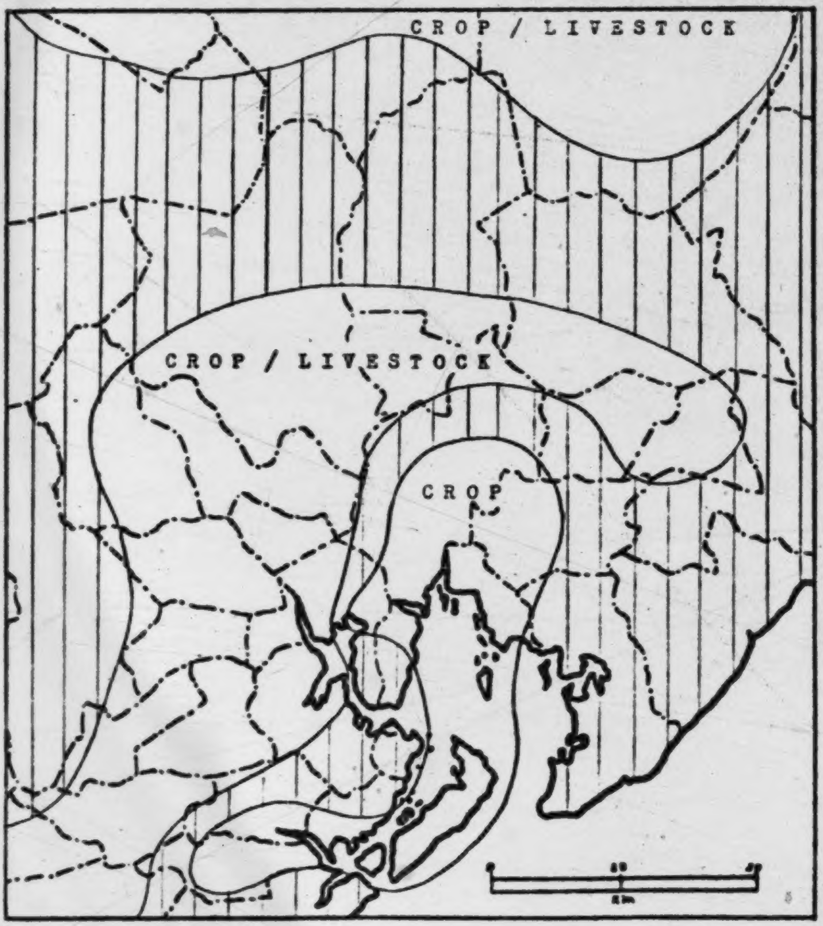
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CROP / LIVESTOCK
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RECÔNCAVO OF BAHIA

Regional Pattern of Specialized Agricultural Enterprises

Crop/Livestock - Area in which crop-livestock enterprises predominate
Crop - Area in which crop enterprises predominate

MAP 104

241 Mixed crop and livestock units dominated the agricultural land
231
233 of an inverted "L shaped" zone which began in the southwest and which,
311 in the Recôncavo, coincided approximately with the tobacco-manioc
region. Mixed crop and livestock units also dominated in the drier
taboleiros north of the Recôncavo. The intermediate zone between the
crop and crop-livestock regions within the Recôncavo was relatively
narrow, conforming to the pattern of rapid transition from sugar cane
to tobacco and manioc north of the Rio Paraguaçu. The outer transition
zone, in which no single property type dominated, included the outer
231 margins of the Recôncavo except in the southwest. Purely livestock-
233 producing units did not dominate the agricultural land of any extensive
area within or adjoining the Recôncavo.

241 The regions delimited above on the basis of the relative area in
311 the two types of crop-producing units had additional significance in
423 terms of the distribution of large-scale and small-scale enterprises
(Map 105). The mixed-unit region, in which manioc and tobacco are so
important, had only limited areas in large properties—usually 5 per
cent to 20 per cent of the enumerated area. There were few large
properties in the southern part of the crop unit region also, but in
the sugar cane area north of the Bay over 40 per cent of the enumerated
area was in large properties. These regional patterns of property
types conform to the distribution of mean property size (Map 106); the
mixed-unit region had mean properties of 10 to 20 hectares in the South-
western Recôncavo and 20 to 30 hectares north of the Rio Paraguaçu,
while the mean property size in the sugar cane area exceeded 100 hectares.

241 Size of Agricultural Properties. As has been seen, the agri-
423 cultural properties of the Recôncavo are highly diverse in size, as is
to be expected in an economy dichotomized into the predominantly

[TEXT CONTINUED ON PAGE 318]

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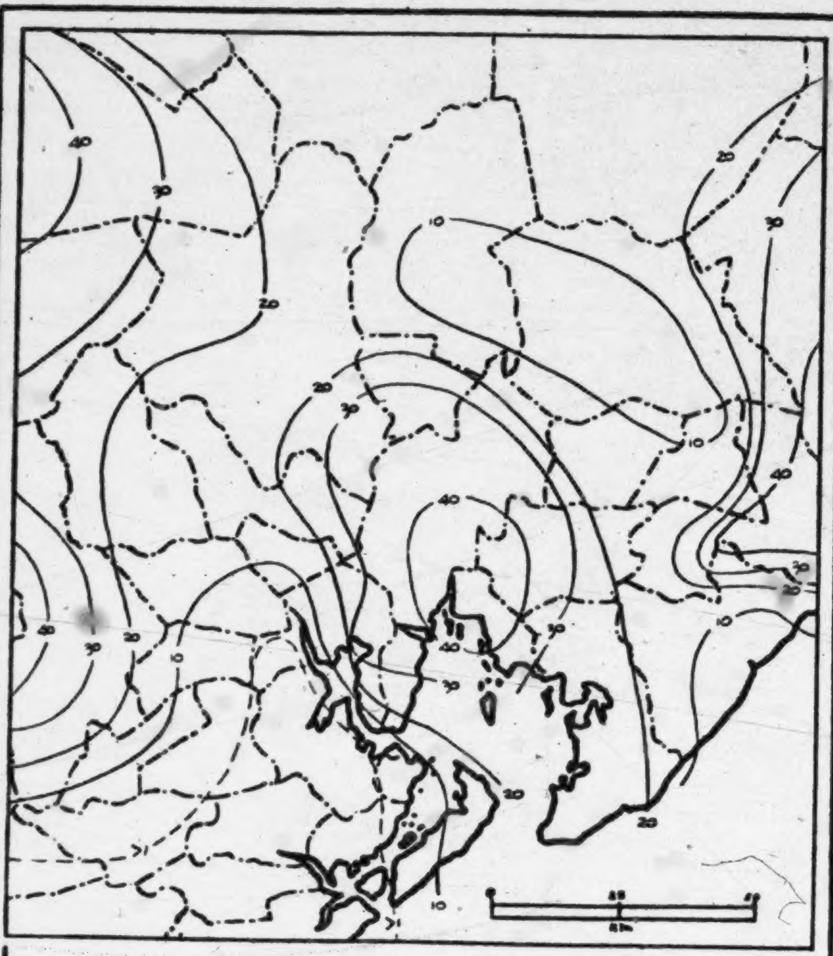
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RECÔNCAVO OF BAHIA

Per cent of the Enumerated Area in

Large-Scale Enterprises--1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 105

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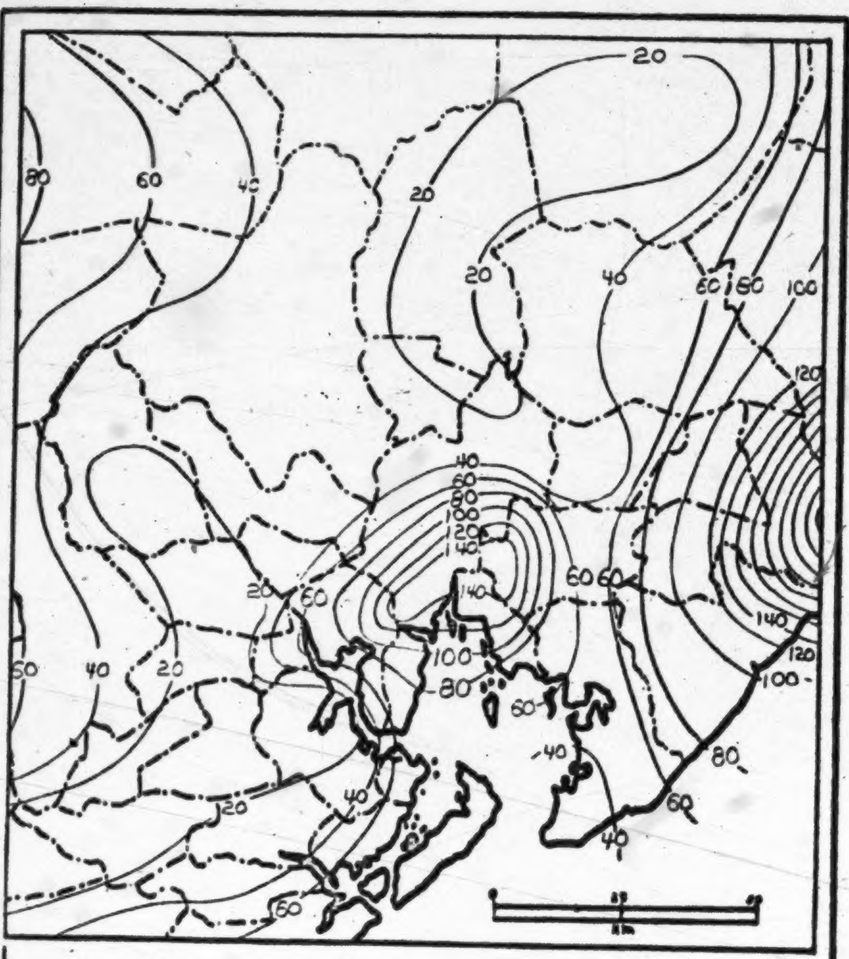
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RECÔNCAVO OF BAHIA

Mean Size of All Agricultural Properties—1940

In Hectares

Source of data: Recenseamento Geral do Brasil, 1940. Censos Econômicos. Bahia. Vol. II.

MAP 106

241 423 small-scale agriculture of the tobacco and manioc cultivators and the large-scale system of the sugar industry. In 1940 the properties of the Recôncavo ranged from less than 2 hectares to over 10,000 hectares. This diversity is characteristic of the region as a whole, and also of the individual municípios. In 14 municípios of the Recôncavo at least 5 per cent of the properties were under 2 hectares in area, while in 12 municípios at least 5 per cent of the enumerated area was in properties of over 1,000 hectares. Within the Recôncavo the mean size of properties varied from 13 hectares in São Filipe to 136 hectares in São Francisco, and in municípios adjacent to the region, from 8 hectares in Santo Antônio to 255 hectares in Mata de São João.

On the basis of the mean size of agricultural properties, as on the basis of many other agricultural phenomena, the Recôncavo can be divided into two parts. The sugar-cane region, as has been seen, is an area of large properties which had a mean size in excess of 100 hectares in 1940. The mean size of the agricultural properties of almost all other parts of the Recôncavo lay in the narrow range of 10 to 40 hectares. Although these figures are in a general way very significant, their meaning varies from place to place as the character of the agricultural components change.

In the 1940 census, agricultural properties were grouped into 15 classes on the basis of the total area in the various units:

Under 1 hectare
1-2 "
2-5 "
5-10 "
10-20 "
20-50 "
50-100 "
100-200 "
200-500 hectares
500-1,000 "
1,000-2,500 "
2,500-5,000 "
5,000-10,000 "
10,000-100,000 "
Over 100,000 "

After an inspection of the array of property size data, it was apparent that the distribution of small, medium, and large properties could be

241 analyzed through the use of only part of the data, thus simplifying the
423 calculations. Properties of 0 to 10 hectares were used to represent small units; properties of 50 to 200 hectares to represent medium-sized units, and properties of over 500 hectares to represent large units. Thus the analysis of small, medium, and large properties which follows deals with a large sample of the Recôncavo's agricultural properties but not the entire array.

Small Properties. In every município of the Recôncavo at least one-fifth of the agricultural properties had less than 10 hectares of total area--in ten municípios over half the properties were under 10 hectares (Map 107). These small properties were particularly numerous in the Southwestern and Northern Recôncavo and in a narrow connecting zone--a concentration which conforms to the area of small crop-cultivation units discussed previously. There were also many small properties in the vicinity of Salvador. The number of small units in the Central Recôncavo was very limited, and most of the small properties which were present were grouped around, rather than within, the zone of commercial production of sugar cane.

The total area in small properties was less than 10 per cent of the enumerated area in most municípios (Map 108). There were two conspicuous exceptions where small properties were very numerous--in São Filipe and Irará:

	Size of Properties	Per cent of Total Number of Properties	Per cent of the Enumerated Area
São Filipe:	under 1 ha.	5	under 1
	1 - 2 ha.	15	2
	2 - 5 ha.	25	9
	5 -10 ha.	32	19
Total		77	31
Irará:	under 1 ha.	3	1
	1 - 2 ha.	11	1
	2 - 5 ha.	41	9
	5 -10 ha.	18	9
Total		73	20

[TEXT CONTINUED ON PAGE 322]

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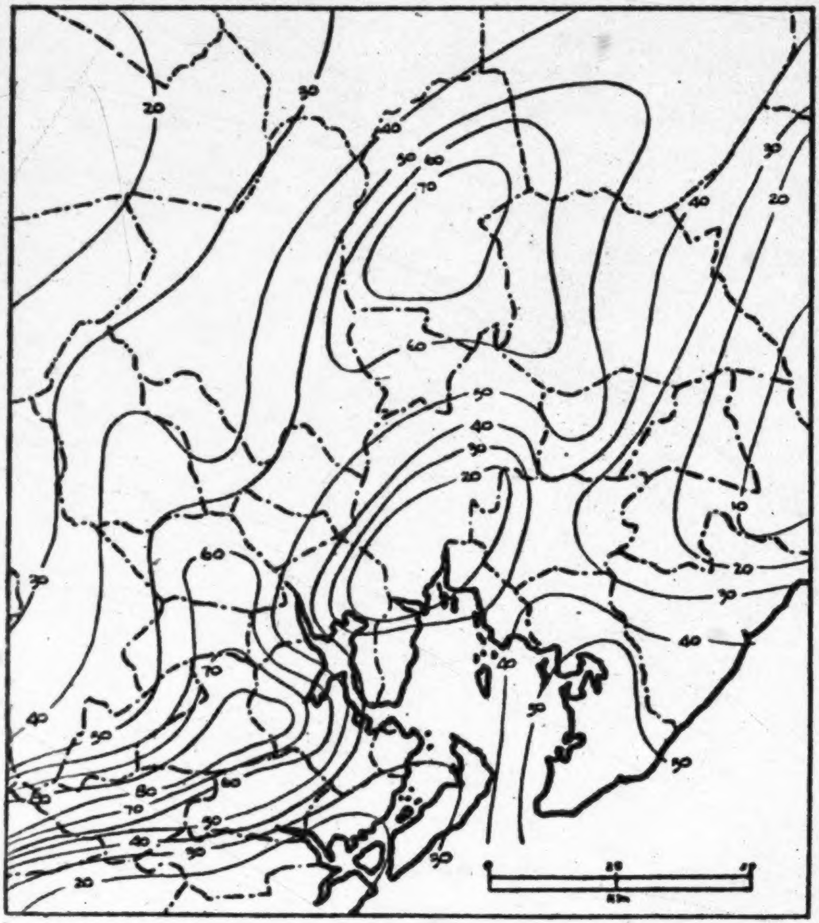
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RECÔNCAVO OF BAHIA

Per cent of All Properties with an Area of

Less Than 10 Hectares--1940

Source of data: Recenseamento Geral do Brasil. 1940. Censos Econômicos, Bahia, Vol. II.

MAP 107

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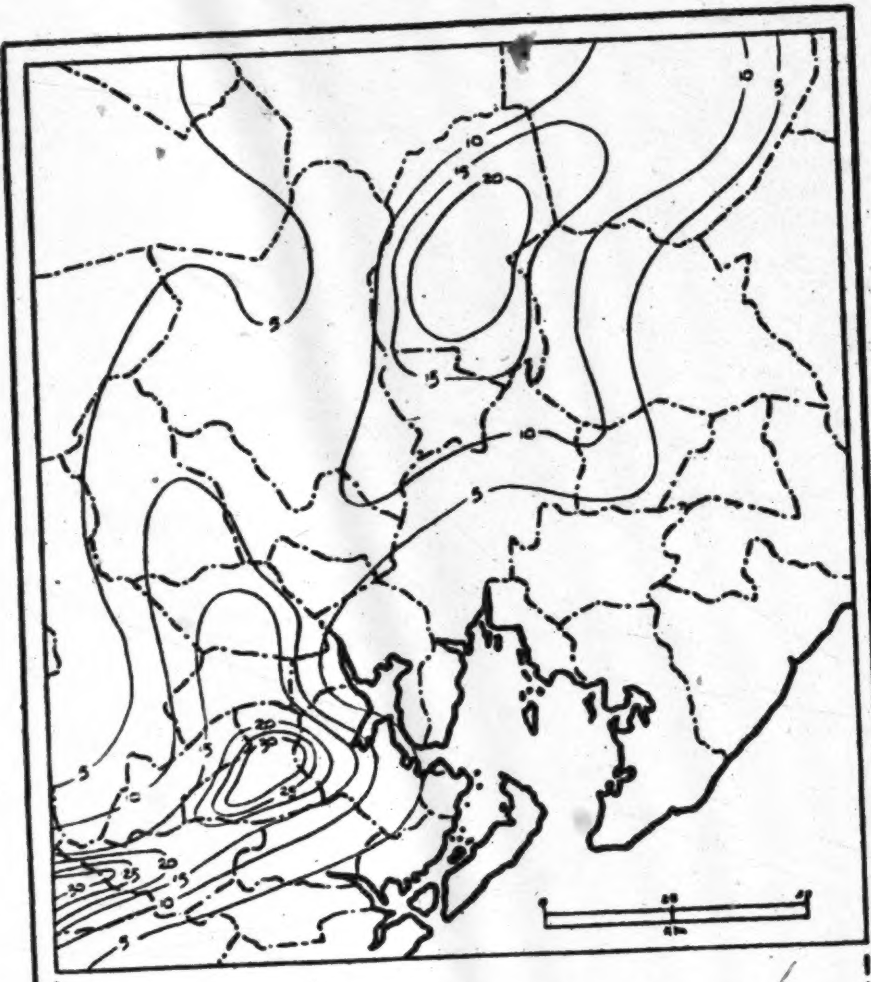
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RECÔNCAVO OF BAHIA

Per cent of the Enumerated Area in Properties with an Area of Less Than 10 Hectares—1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 108

241
423

Medium-Sized Properties. The general pattern of medium-sized properties in the Recôncavo was analyzed through a study of the distribution of the units composing the 50 to 200 hectare classes. These properties were by no means as common as the small properties, except in the município of Pojuca (Map 109). Over 25 per cent of the total enumerated area was in these medium-sized properties throughout most of the outer Recôncavo, from the southwest sector to the northern limits of the município of Salvador (Map 110). The area along the littoral of the Bay and in the sugar cane zone, as well as along the extreme western and southwestern limits of the Recôncavo, contained fewer medium-sized properties.

Large Properties. Although there were few large properties, i.e., properties with over 500 hectares, in the Recôncavo as a whole, the area which they occupied within some municípios in 1940 was both extensive and significant. Over 70 per cent of the enumerated area was in large properties along the littoral and in the Coastal Plain section north of the Bay, as well as along the eastern and western frontiers of the Recôncavo (Map 111). Elsewhere in the region and adjacent to the northern and southern limits, the area in large properties was relatively limited, but there were some large units in every município except Cruz das Almas.

The large properties of the Recôncavo are particularly significant, for they play a very important role in the socio-economic complex of agriculture—a role disproportionately large in relation to their number and their portion of the agricultural land. East and west of the region these units generally were either very large ranches or, along the coast, coconut plantations. These large extra-Recôncavo properties were often very extensive--west of Castro Alves there were

[TEXT CONTINUED ON PAGE 326]

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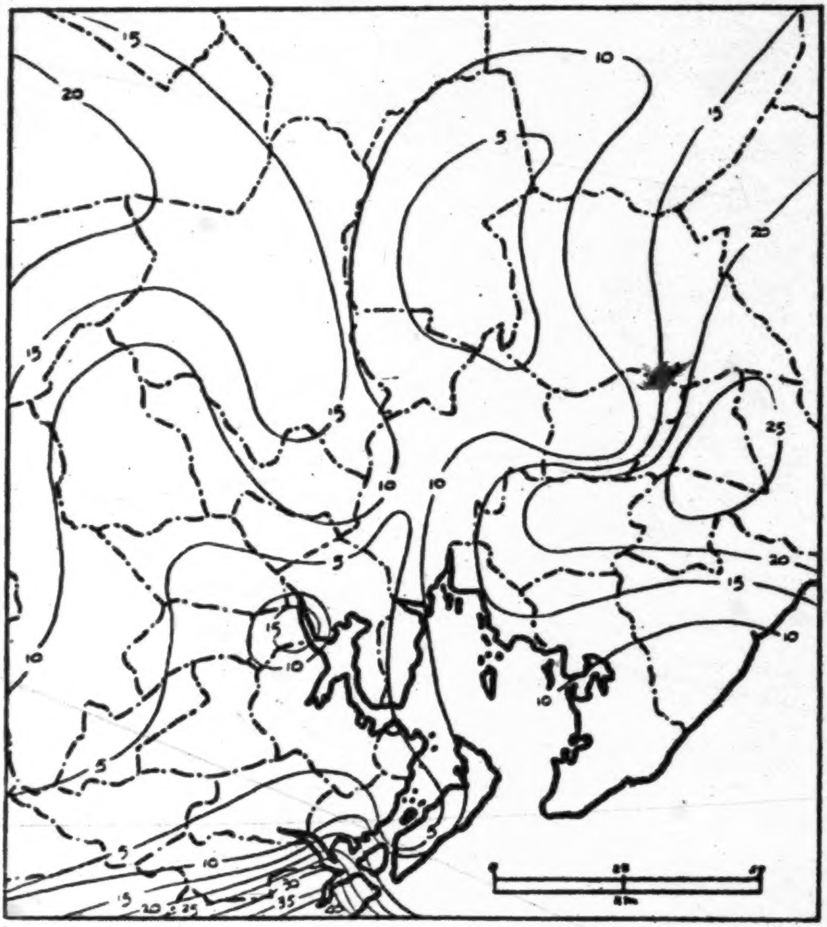
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RECÔNCAVO OF BAHIA

Per cent of All Properties with an Area of

50 to 200 Hectares--1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 109

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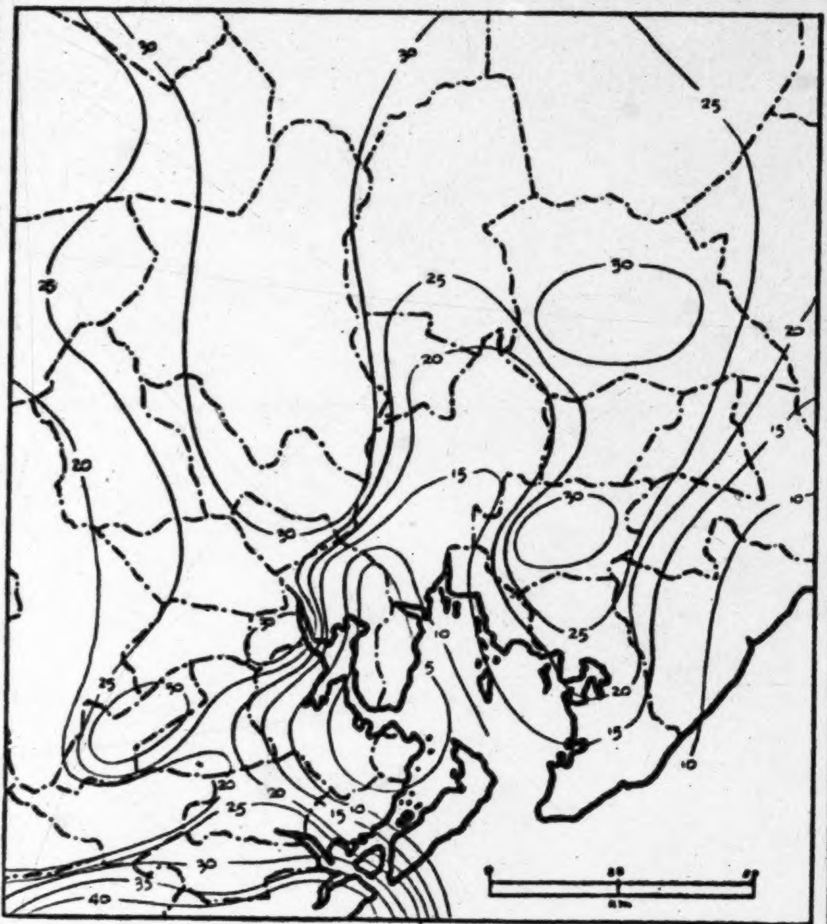
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RECONCAVO OF BAHIA

Per cent of the Enumerated Area in Properties with an Area of 50 to 200 Hectares--1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 110

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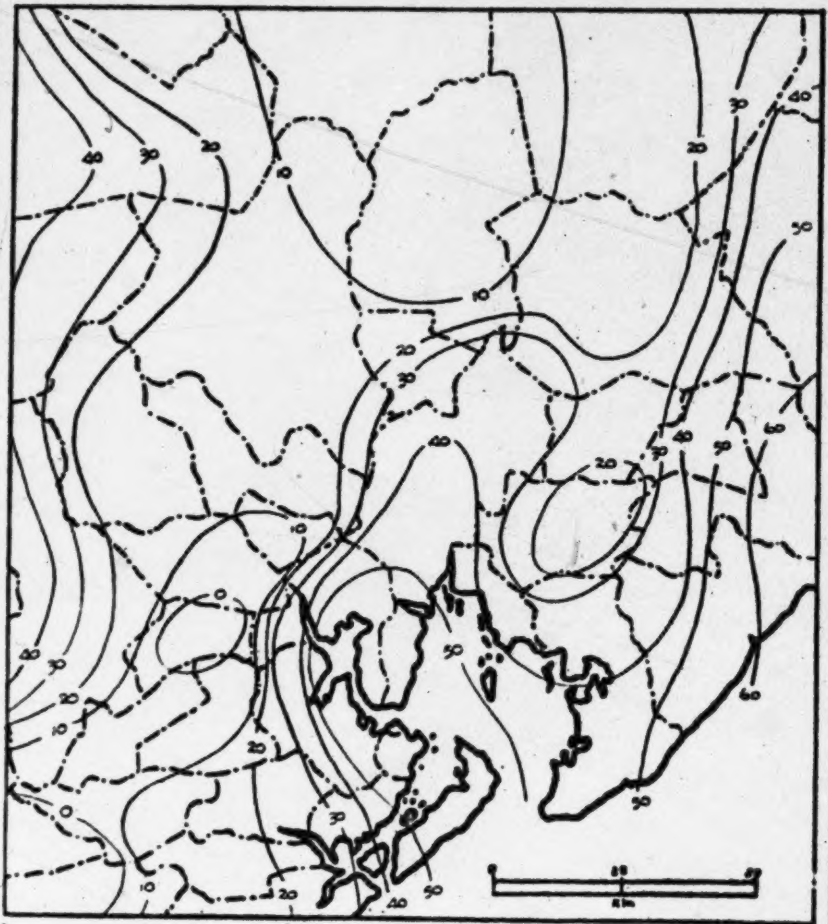
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RECÔNCAVO OF BAHIA

Per cent of the Enumerated Area in Properties with an Area of More Than 500 Hectares—1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 111

241 423 some properties in excess of 100,000 hectares of land. Such overwhelmingly large properties signalize a tremendous concentration of power and, for the sertão, much wealth.

The large properties of the Recôncavo were less extensive than the vast fazendas of the sertão, but they probably represented an even greater assemblage of economic and social power. The sugar cane planta- [249] [471] tions and the associated usinas, with their traditional prestige, large capital investment, and centralized production, are the preponderant social institutions of the Recôncavo.

Land Tenure. Most of the formal categories of farm tenure which are characteristic of the agriculture of the United States are present also in the Recôncavo: ownership by private individuals and corporations; operation by owners, administrators, renters, and "squatters."[5] However, the contrasts in property size and the centralized control of agricultural credit and capital in the Recôncavo give these these general types of agricultural tenure and operation a distinctive character.

241 423 472 Proprietor Operation. Most of the agricultural properties of the Recôncavo were operated by the owner in 1940. Only in the Southern Recôncavo--Maragogipe and Salvador--were less than half of the properties owner-operated. In most of the region and the adjoining area three-fourths of the units were operated by the owner (Map 112). The area occupied by owner-operated units was in excess of half the enumerated area in all parts of the region except the Southern Recôncavo (Map 113). However, the area in owner-operated properties was higher in the tobacco-manioc area of the Southwestern Recôncavo--70 to 80 per cent--than in either the tobacco-manioc or the sugar cane region north of the Bay. A greater contrast is reflected in the map of the mean size of owner-operated properties (Map 114). In Conceição do Almeida--

[TEXT CONTINUED ON PAGE 330]

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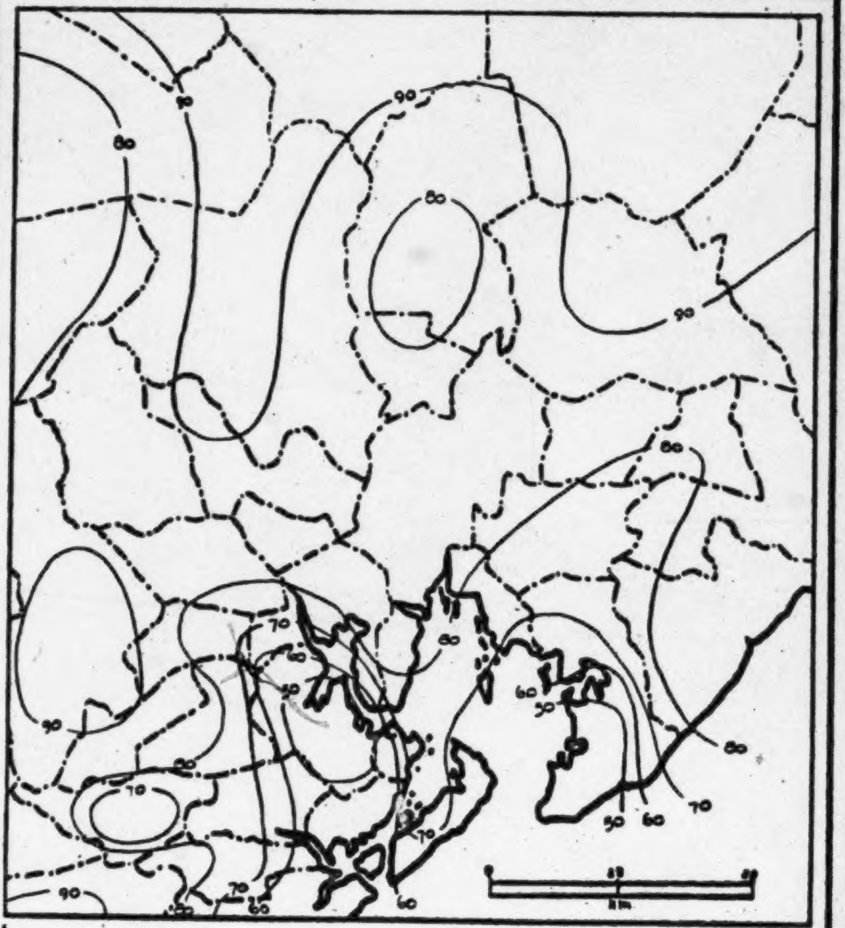
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RECÔNCAVO OF BAHIA

Per cent of All Agricultural Properties Which Were Owner-Operated--1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 112

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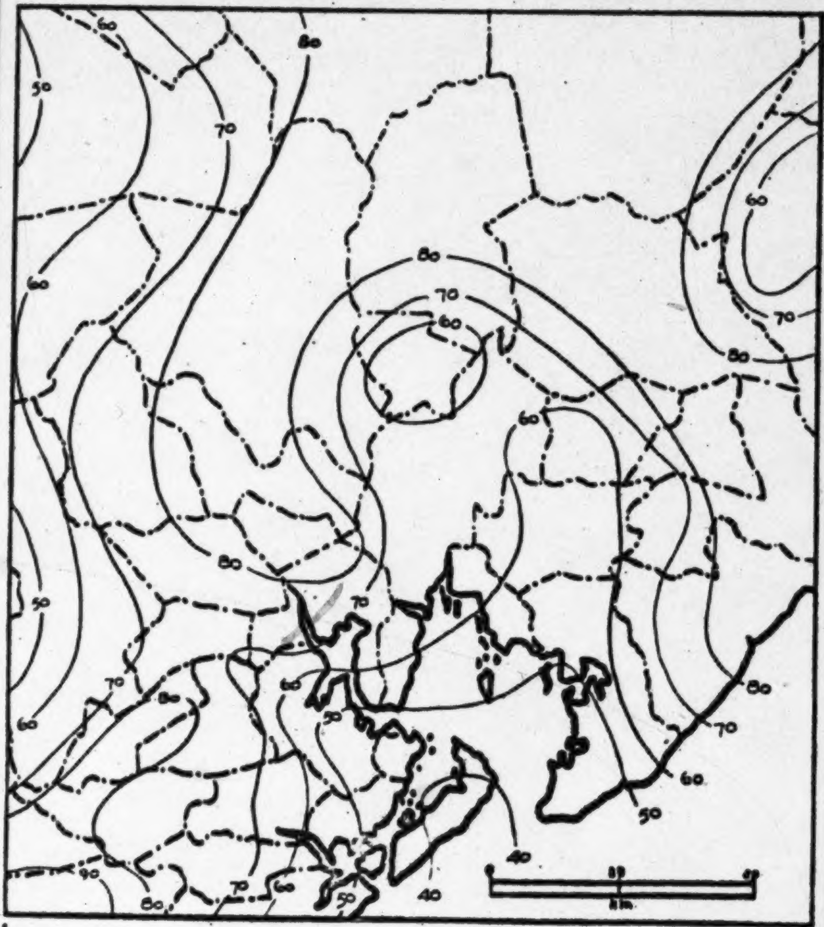
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RECÔNCAVO OF BAHIA

Per cent of the Enumerated Area in

Owner-Operated Properties—1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 113

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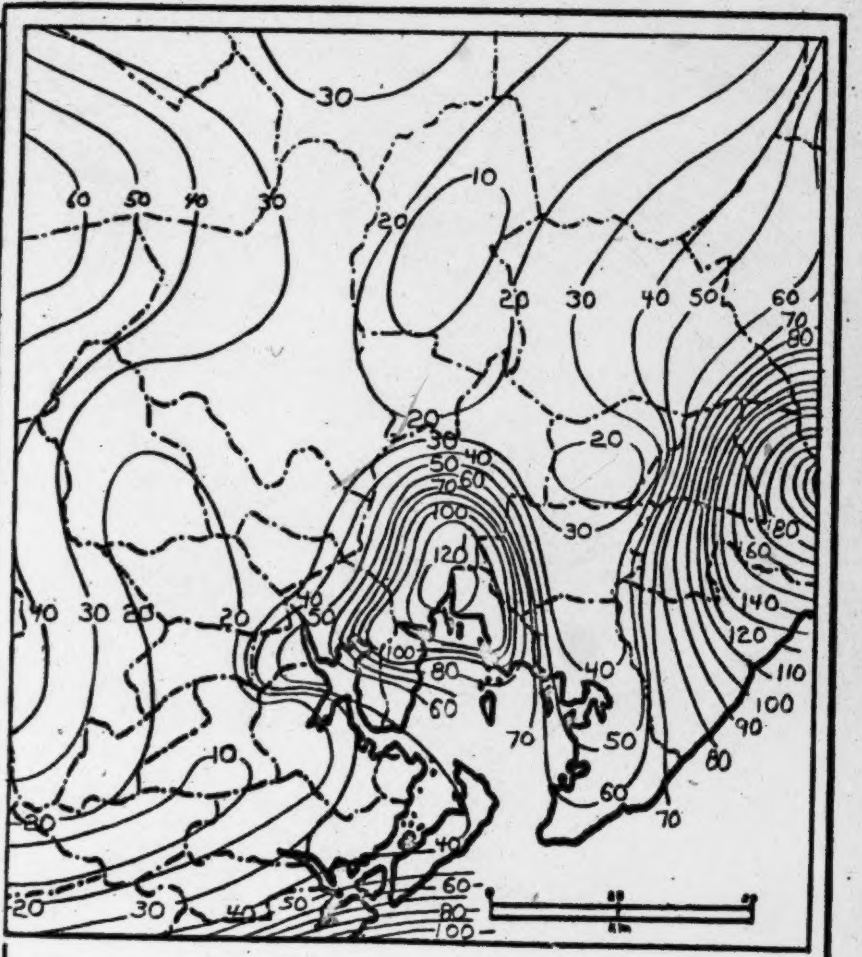
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RECÔNCAVO OF BAHIA

Mean Size of Owner-Operated Properties—1940

In Hectares

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 114

241 Southwestern Recôncavo--the 80 per cent of all units which were owner-
423 operated had a mean size of 16 hectares in 1940. In São Francisco--
472 Central Recôncavo--the 75 per cent of all units which were owner-operated
had a mean size of 113 hectares. In general the mean size of owner-operated units in the tobacco-manioc region was from 15 to 30 hectares, while the mean size in the sugar cane region exceeded 100 hectares.

241 Operation by Administrator. Absentee ownership in the Recôncavo
423 probably had its origin in the colonial period, when it was the practice
471 of many of the senhores de engenho (sugar cane planters) to spend part
178 of the year in Salvador. As the urban interests of the owner increased, the management of some properties passed into the hands of overseers, frequently drawn from the mixed-blood retinue of the plantation owner. To a lesser extent the same practice seems to have developed in other parts of the Recôncavo, as the property owner became involved in business, in the professions, or in politics in the cidades or in Salvador. The development of corporate landholding as a concomitant of the usina system has made agricultural administrators even more numerous.

241 Properties operated by administrators were found in every muni-
423 cípio of the Recôncavo in 1940 (Map 115). In 13 municípios over
471 one-tenth of the properties were so operated. The number of administrator-operated properties was relatively large in São Félix--25 per cent--in the sugar cane region, but also in the município of Salvador and on the island of Itaparica opposite.[6] The area in administrator-operated properties was relatively great in the sugar cane zone--30 to 40 per cent--and near Salvador, in general conforming to the pattern of the relative number of properties under administrators (Map 116). However, administrator-operated properties in the Central Recôncavo were relatively large--200 hectares in São Francisco

[TEXT CONTINUED ON PAGE 333]

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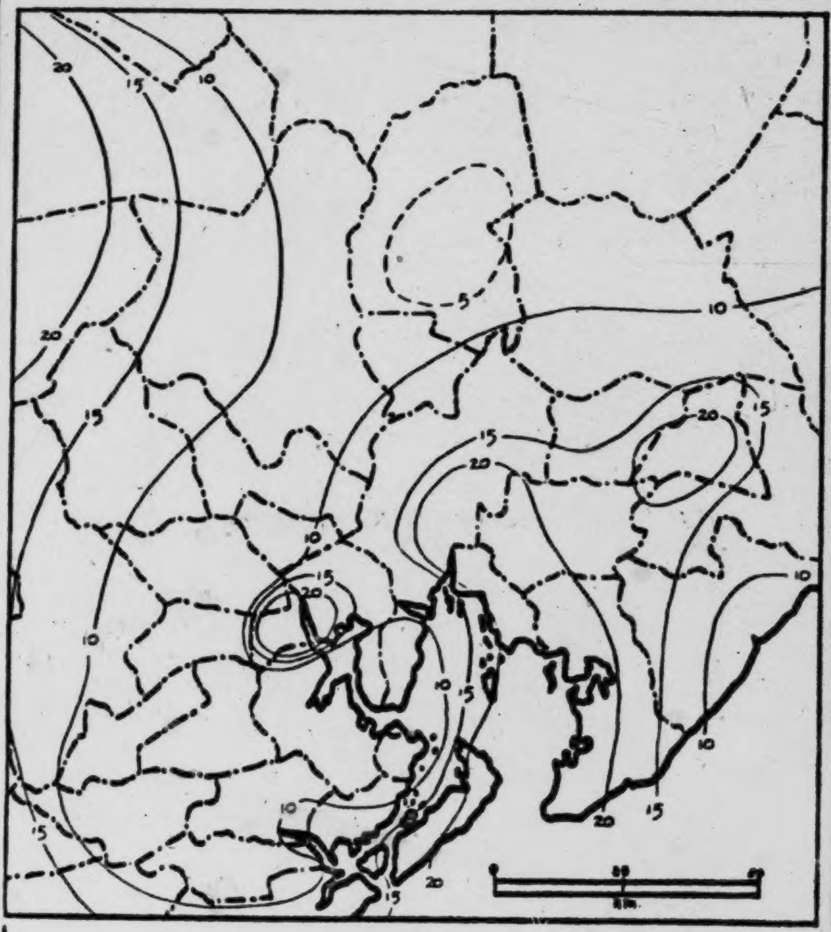
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RECÔNCAVO OF BAHIA

Per cent of All Agricultural Properties Which Were

Operated by Administrators--1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos
Econômicos, Bahia, Vol. II.

MAP 115

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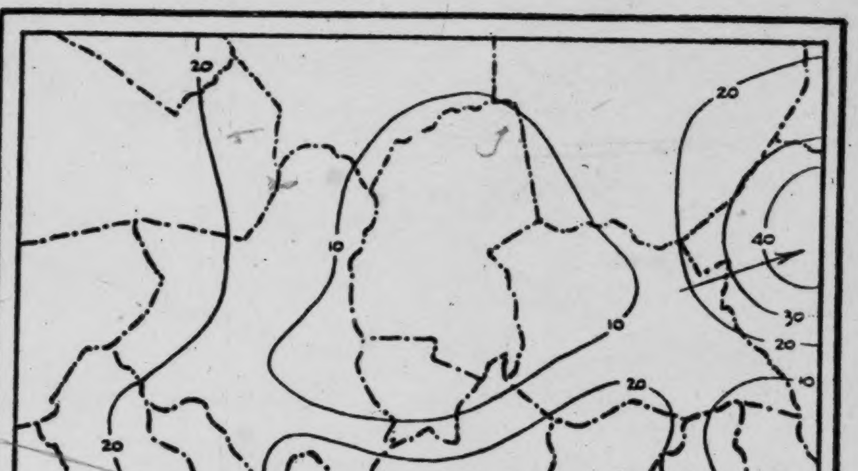
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RECÔNCAVO OF BAHIA

Per cent of the Enumerated Area in

Administrator-Operated Properties—1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 116

241 423 471 and 161 hectares in Santo Amaro--while those of the Salvador area were relatively modest—81 hectares in Salvador and 72 hectares in Itaparica.

241 427 Rented Properties. There were few rented properties in the Recôncavo as a whole in 1940 (Map 117), but in three areas over 10 per cent of the properties were rented: in the core of the tobacco-manioc area of the Southwestern Recôncavo; in Irará; and around Salvador. In Maragogipe, 52 per cent of the properties, occupying 15 per cent of the enumerated area, were rented (Map 118). In Santo Antônio, adjoining the Southwestern Recôncavo, over 30 per cent of the properties were rented, but along the western and norther border zones of the Recôncavo there were very few rented properties. Because of the small size of the units, rented properties in the Recôncavo generally occupied less than 10 per cent of the enumerated area.

[244] [249] The rented properties of the tobacco-manioc crop region were usually small, from 10 to 30 hectares, but in the sugar cane area they averaged over 200 hectares (Map 119). If the official data are correct, the mean size of rented properties in Coração de Maria was over 267 hectares, but this seems very unlikely and has not been shown on the map.

241 423 471 Corporate Lands. In 1940, one-hundred ninety-eight of the 29,000 agricultural properties of the Recôncavo were owned by corporations or companies. The total area of these properties was 33,000 hectares, almost 4 per cent of the total enumerated area of the region. Moreover, the land which composed these properties was some of the most productive in the Recôncavo. The number of corporate properties and the concentration of land under corporate ownership almost certainly has increased since 1940.

[TEXT CONTINUED ON PAGE 337]

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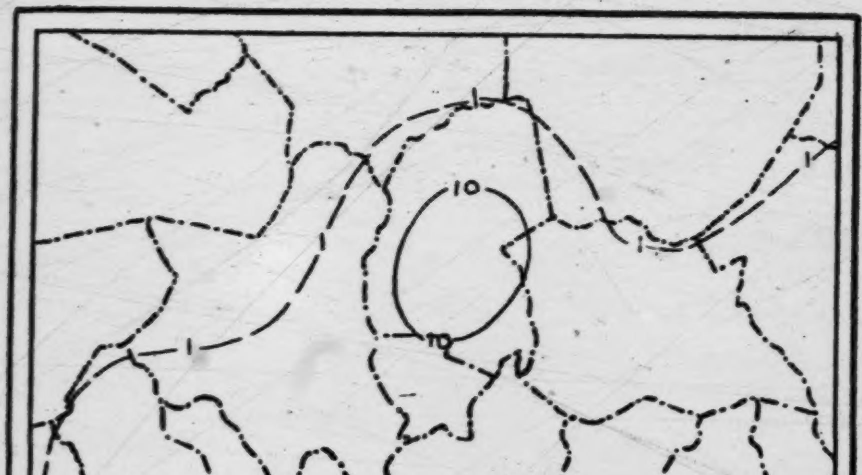
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RECÔNCAVO OF BAHIA

Per cent of All Agricultural Properties Which Were Operated by Renters—1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 117

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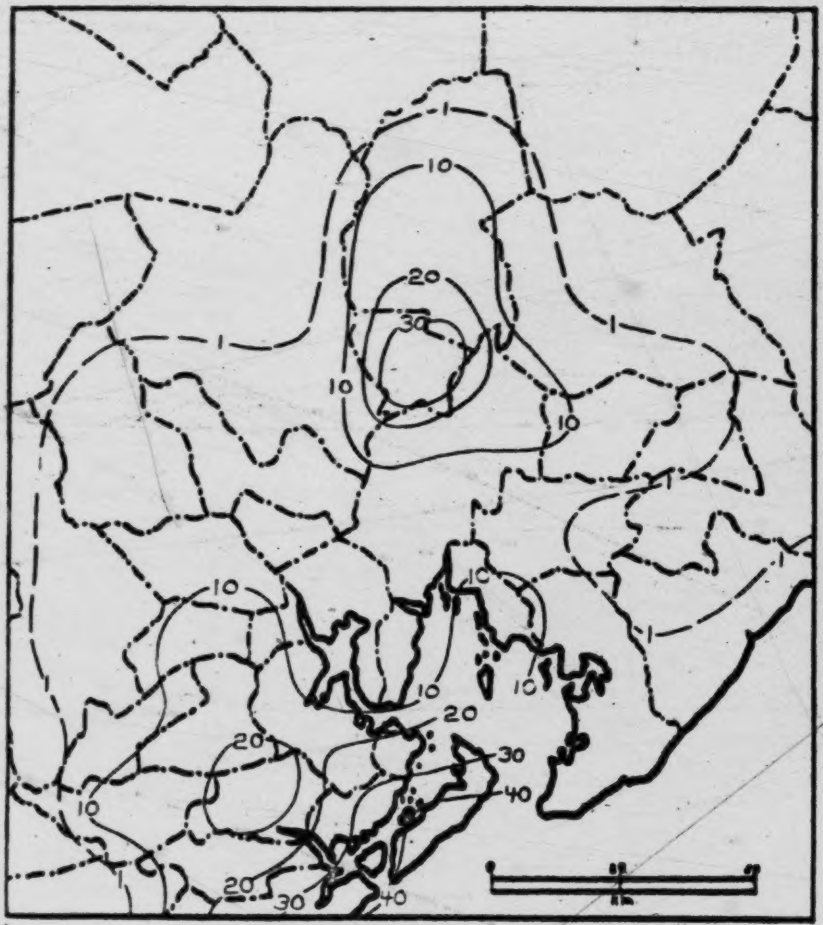
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RECÔNCAVO OF BAHIA

Per cent of the Enumerated Area in

Renter-Operated Properties--1940

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 118

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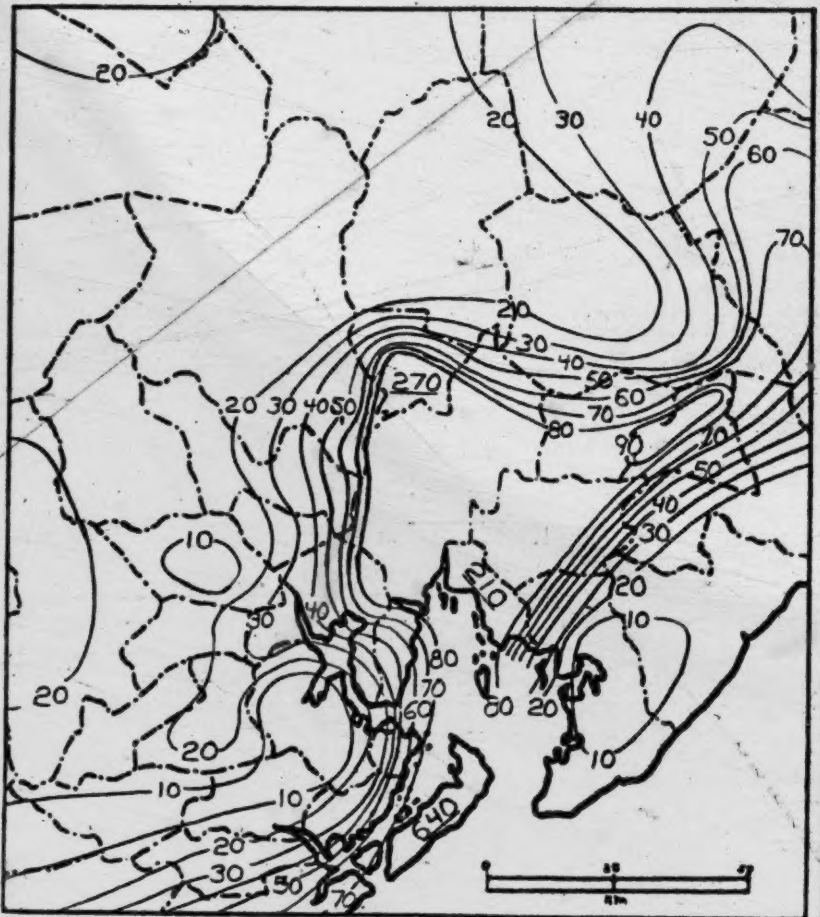
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RECÔNCAVO OF BAHIA

Mean Size of Renter-Operated Properties—1940

In Hectares

Source of data: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

MAP 119

241 423 471 [249] Although there were a few corporate lands in the vicinity of the city of Salvador in 1940, the main concentration was in the sugar cane area north of the Bay. Here the large corporately-owned *usinas* controlled as much as 30 per cent of the agricultural land. Most of these corporate properties were sugar cane plantations, but some were cattle ranches and other accessory properties. The corporations tend to dominate the sugar cane areas which are most productive and most favorably located for the transportation of cane and of the refined sugar and other products.

Conclusion. The strong network of interpersonal relationships, discussed in connection with crop cultivation and systems, is often more important than the purely formal aspects of land ownership and operation in the Recôncavo. The agricultural society of the Recôncavo is closely knit, so that the effective freedom of operation of the farm operator [565] is very limited. Although the large and rich landowners have, on some levels, a greater latitude than the small operators, they too are enmeshed in a system of inherited economic and social obligations and are subject to the restrictions imposed by the urban upper class.

241 441 442 472 The two primary local supervisory groups in the agricultural society are the merchant-buyers of the tobacco-manioc region and the general administrators and plantation owners of the sugar cane region. [656] However, both these groups are under the more or less immediate control of the sugar and tobacco companies in Salvador and of the official *Instituto do Açúcar e do Álcool* and the *Instituto Baiano do Fumo*.[7]

249 471 472 656 The operations of the sugar cane plantations are dictated by the mills, which specify the type and quantity of cane and the schedule of delivery. In turn, the amount of sugar produced by the mill is determined by the *Instituto do Açúcar e do Álcool*, while the policy of

BB 249 471 472 [656]

operation is determined by the company officers, who generally live in Salvador. The company, in its turn, is subject to some control from Rio de Janeiro and São Paulo investors. This structured system of control probably is one of the reasons for the continuation of the monoculture in the sugar cane area. The usual explanation offered for the cane monoculture is the unique suitability of the soil and climate and the innate conservatism of the _Baiano._ However, one of the features of the present sugar economy is the lack of capital for other enterprises. The absentee owners, who are the only likely source of capital, are hesitant to advance money for new and untried enterprises. Moreover, alternative agricultural enterprises, if successful, would reduce the supply of cane and thus eventually raise the cost of _usina_ operation.

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In the tobacco-manioc region the control exercised by Salvador is indirect, but compelling, because the small tobacco producer is almost completely at the mercy of the buyer, who receives orders from the tobacco exporter and manufacturer through the agent.

BB 241 423 471 [184] [231] [233]

The differences in production specialization, size, and tenure among the agricultural properties of the Recôncavo both accentuate the basic dichotomy of the region and re-emphasize its unity. The small-scale mixed crop cultivation and livestock producing unit of the tobacco-manioc region and the large-scale crop cultivation unit of the sugar region are both esentially engaged in the production of commercial crops. Both are distinct from the primary agricultural unit of the _sertão,_ the livestock ranch. Both are subject to the over-all economic control of the center—Salvador.

B BB 241 423 184 [249]

In most parts of Brazil, as in the Recôncavo, the agricultural properties are highly diverse in size, function, and ownership. Most areas of sugar cane cultivation have relatively large properties, primarily engaged in crop cultivation. In other areas, as in

B In other areas, as in
BB 249 the Recôncavo, more and more of the cane plantations are passing into
471 423 the hands of the central mills and are being operated by administrators.
178 Small properties, owner or renter operated, are also a widespread
feature of the Brazilian agricultural scene. Frequently, as in the
B BB Recôncavo, large and small properties are intermixed in zones where
241 231 several crops and livestock are raised jointly. Throughout Brazil the
233 423 class of small property holders is tied to the merchant and large land-
B 241 holder class by a network of economic and social relationships much like
423 those of the Recôncavo. Apparently the number and total area of small
471 178 properties is growing, especially in Central and South Brazil. If this
be so, the development of small farms in the Recôncavo, such as those
producing tobacco and manioc, is part of the nationwide trend.

000 Footnotes - Chapter VIII

[1] Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II.

[2] The data for the total area of the various municipios used in this analysis are taken from Características Demográficas do Estado da Bahia, No. 8. These data are the most recent and presumably most accurat available for the state of Bahia. In a number of cases they disagree markedly with area given in the 1940 census, which was based upon earlier and probably less accurate calculations from older maps.

[127] [3] The distinction between large- and small-scale units was made in the census as follows: (1) Agricultural units with over 50 hectares in "major crops (pineapple, alfalfa, cotton, rice, oats, potatoes, sugar cane, rye, barley, beans, tobacco, castor beans, manioc, corn, wheat, coffee, cacao, coconuts, oranges, bananas, or grapes) were large-scale. All others were small-scale. Area in these crops was estimated from production figures and mean yields. (2) Livestock units with 200 head of cattle or sheep; 100 head of horses, goats, or pigs; or 50 asses or mules, or an appropriate combination of these, were large-scale. Alternatively, a smaller number of reproductive females—100 cows or ewes; 60 mares; or 20 sows—made the unit large-scale. All others were small-scale. (3) Crop-livestock units, in order to qualify as large-scale units, had to satisfy both criteria simultaneously.

[241] [13] [84] [361] [4] The size, shape, and physical and economic diversity of many of the municípios of the Recôncavo make it very difficult to evaluate and to map mean data. This is particularly true of Santo Amaro, of which part is in the sugar cane region, part in the tobacco-manioc region, and part in sparsely settled forest land. It is also true for São Gonçalo, which stretches from the humid Intermediate Hills to the dry western caatinga. Of all the municípios, only São Félix and Conceição da Feira, both very small, have a relatively homogeneous landscape. The details of the interpretations and, to an even greater extent, the maps were drawn with numerous inferences based upon correlative data and field observations.

[5] Agricultural properties are also held by religious orders, syndicates, cooperatives, and other legal persons, but such properties are not very common in the Recôncavo. "Squatters," as defined by the census, included both those who occupied public land legally but without title and those who illegally occupied private land. Renters included both cash and share renters.

[6] There were about 50 administrator-operated properties, with an average size of 30 hectares, in the município of São Félix, according to the census. The reasons for this concentration are not apparent, especially since this local phenomenon was not studied in the field. The concentrations around Salvador and on the island of Itaparica are suburban country houses—chácaras—a Brazilian institution. Many of these chácaras are on small properties which are operated by an overseer and which produce some agricultural products, especially vegetables and fruits. A large number of these properties line the eastern shore of the island of Itaparica; there are also a few in the forested area around Salvador.

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[128] [7] The marketing system of tobacco will be treated in the chapter on marketing. The development of the supervisory government agencies was discussed in the chapter on the evolution of the Recôncavo.

CHAPTER IX

VALUE OF AGRICULTURAL PRODUCTION

B BB 241 128 The analysis of the distribution of cropland and of the quantity of production has established the Recôncavo as a distinctive regional unit of Bahia and of Brazil without formulating clearly the importance of the region to the state or the nation. Similarly, the internal differentiation of the region has been discussed in terms of various municípios, sub-regions, and crop regions without establishing the basic importance of these to the Recôncavo except as components of the agricultural landscape or as producers of crops with an unspecified value. Although the value of agricultural production is not exclusively economic, monetary value is one of the most useful general standards for estimating the collective and individual importance of diverse agricultural products.

B BB 128 The tables and discussion which follow have three purposes: (1) the estimation of the importance of the Recôncavo and its individual products to the Brazilian and the Bahian economy; (2) the determination of the importance of individual products within the economy of the region; and (3) the evaluation of the economic importance of the crop regions, previously delimited, to the Recôncavo.

B BB 241 433 The total value of the crops of the Recôncavo was less than 1 per cent of the total value of crop production in Brazil in 1948, based upon a comparison of the value of 21 principal crops of Brazil and of the Recôncavo which are given in Table XV. Although for several centuries the region was an outstandingly productive center of the Brazilian economy, today it plays a secondary role even within Bahia. BB 245 433 439 In recent decades the southern coast of the state, growing cacao for foreign markets, has

[TEXT CONTINUED ON PAGE 344]

TABLE XV

VALUE OF THE CHIEF COMMERCIAL PRODUCTS OF THE RECÔNCAVO COMPARED WITH OTHER AREAS--1948

Agricultural Products	Recôncavo	Bahia	Other Centers*	Brazil
	Value of Production in Cr.$000			
Crops:				
Leaf Tobacco	86,700	155,041	227,266 - Rio Grande do Sul	615,293
Manioc	70,600	292,373	351,427 - Minas Gerais	2,357,570
Sugar Cane	54,200	148,980	458,254 - Pernambuco	2,425.494
Beans	15,500	123,552	670,274 - Minas Gerais	2,719,235
Oranges	14,800	28,904	191,938 - Rio de Janeiro	567,790
Bananas	9,200	35,503	144,525 - São Paulo	754,380
Corn	8,200	71,623	1,423,153 - Minas Gerais	5,249,030
Coconuts	6,500	46,368	42,135 - Paraiba	225,870
Coffee	3,400	95,958	3,947,704 - São Paulo	6,450,919
Pineapples	1,700	4,130	24,020 - São Paulo	94,404
Peanuts	1,300	1,738	258,287 - São Paulo	292,274
Sweet Potatoes	1,200	19,837	100,732 - Rio Grande do Sul	435,547
Total of 12 Crops	273,300	1,024,057		22,137,506
Total of 21 Principal Crops**	275,000	1,731,164	11,213,444 - São Paulo***	33,082,875
Livestock	60,000			

*In each case the figure which is used for comparison is that of the principal producer of the individual crop in Brazil, except in the case of coconuts, where Bahia is the chief producer and the second most important center has been used.

**These are the 21 principal crops of Brazil which are listed in Produção Agrícola: 1948.

***São Paulo was used in this comparison because the total value of its production of the principal crops exceeds that of any other state.

Source: Produção Agrícola: 1948.

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BB 245 433 439 come to be the area of the greatest value of agricultural production in the state--Cr.$1,007,824,000, in 1948, almost three times the value of B crop and livestock production in the Recôncavo, Cr.$335,000,000. The BB 231 233 433 total value of livestock production in the Recôncavo is estimated to be about Cr.$60,000,000 for 1948. Although no comparable figure is available for Brazil, probably the Recôncavo had less then 1 per cent of the livestock and thus produced less than 1 per cent of the value of livestock in the nation as a whole.[1]

B BB 433 The present inferior position of the Recôncavo is in part a reflection of the relative decline of the region in the nineteenth century discussed in the chapter on the evolution of the Recôncavo. However, the Recôncavo continues to lag behind in the contemporary development B BB 241 249 433 [458] [650] of Brazil. From 1944 to 1952 the total *cruzeiro* value of the principal crops of Brazil increased four-fold, while the value of Bahia's tobacco crop, a good indicator of the economic shifts of the Recôncavo, increased by only one-fifth despite the concurrent inflationary spiral. Even the government-stabilized sugar industry of the Recôncavo produced only three and one-half times its 1944 value. Although the above increases are more indicative of the steadily declining value of Brazilian currency than of true economic development, they are an index of the relative importance of agriculture in the Recôncavo to the national economy.

BB 249 244 433 311 Tobacco, sugar cane, and manioc, which occupied 70 per cent of the Recôncavo's cropland, accounted for 77 per cent of the total value of all principal crops in 1948 (Table XVI). Each of the three crops contributed at least 20 per cent of the value of all crops, while no other crop produced over 6 per cent of the total. The *cruzeiro* value of these principal crops, and of livestock, and their relative position within the nation has been given in Table XV, above.

TABLE XVI

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RELATIVE CROPLAND AND VALUE OF ALL CROPS OF THE RECÔNCAVO WITH A VALUE OF MORE THAN Cr.$1,000,000 IN 1948

Crop	Per cent of the Cropland of the Recôncavo	Per cent of the Value of All Principal Crops of the Recôncavo
Tobacco	27	32
Manioc	28	25
Sugar Cane	15	20
Beans	9	6
Oranges	1	5
Bananas	1	3
Corn	12	3
Coconuts	1	2
Coffee	4	1
Pineapple	<1	<1
Peanuts	<1	<1
Sweet Potatoes	<1	<1

Source: Calculations and estimates based on data from Produção Agrícola: 1948.

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The leading position of tobacco results in part from its extensive cultivation, and in part from its relatively high unit value. While the mean value of production of all crops in the Recôncavo was Cr.$3,400 per hectare in 1948, tobacco produced Cr.$3,900 per hectare, as given in Table XVII, which also shows the value of production per hectare of the other principal crops. The leading position of tobacco is at variance with tradition which, as has been seen, assigns the first rank to sugar cane. Not only was tobacco the most valuable crop of the Recôncavo in 1948, but it was also the leading crop in seven municípios of the tobacco-manioc region, where it accounted for a minimum of 40 per cent of the value of all crops. Within four separate municípios of the crop region, it accounted for about 60 per cent of the total value of crops (Map 120). The Southwestern Recôncavo was the chief center of the production of tobacco, as indicated by value as well as by cropland and bulk, for it produced over 63 per cent of the total value of tobacco in the Recôncavo. Within this section, Cruz das Almas was the

[TEXT CONTINUED ON PAGE 347]

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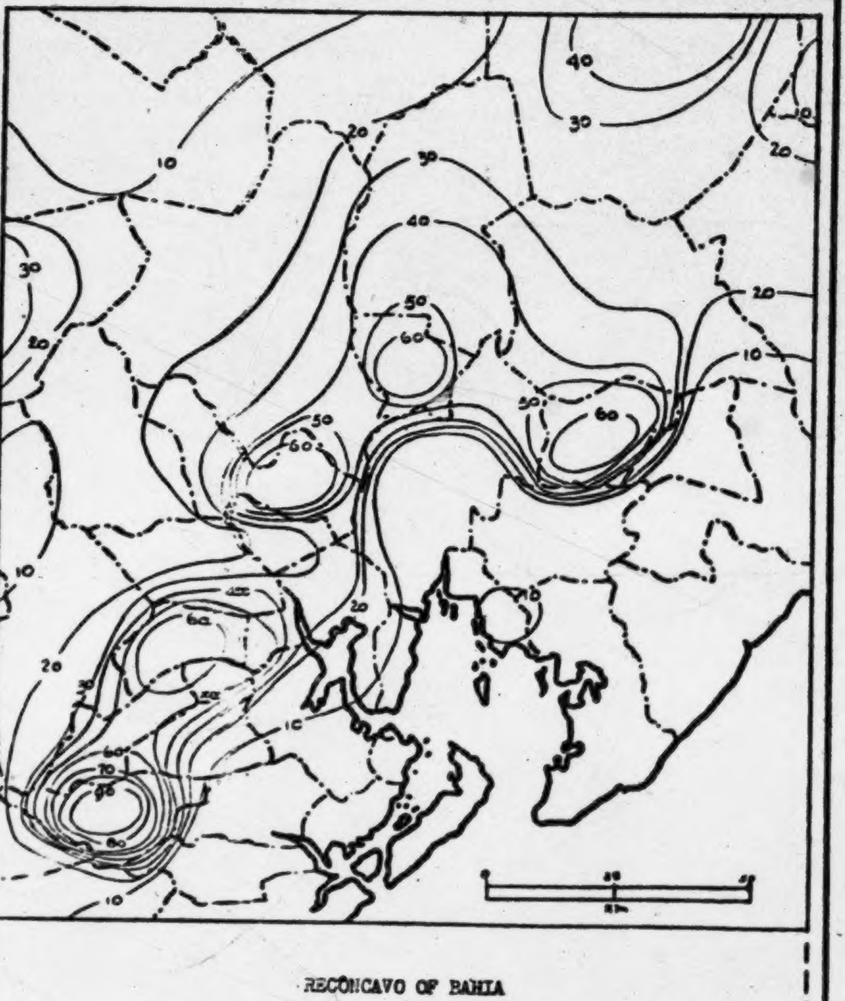
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RECÔNCAVO OF BAHIA

Per cent of the Total Value of Crop Production

Contributed by Tobacco--1948

MAP 120

TABLE XVII

MEAN VALUE OF PRODUCTION PER HECTARE FOR THE CROPS OF THE RECÔNCAVO IN 1948

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Crops	Value of Production Cr.$1.000 per ha.
Principal Crops*	
Tobacco	3,900
Manioc	3,100
Sugar Cane	4,600
Beans	2,200
Oranges**	13,300
Bananas**	8,600
Corn	800
Coconuts**	7,400
Coffee**	1,400
Pineapple	1,000
Peanuts	2,400
Sweet Potatoes	3,500
All Crops	3,400

*Crops with a value in excess of Cr.$1,000,000.

**There is little consistent relationship between the area and production of these crops, so that local values for these crops often depart widely from the mean.

Source: Calculations and estimations based upon Produção Agrícola: 1948.

249 433 leading producer--40 per cent of the total value of the tobacco crop. Notwithstanding the dominant role of the Southwestern area, tobacco production north of the Rio Paraguaçu was also significant--contributing 24 per cent of the total value of the crop.

As has been indicated, several grades of tobacco are produced in the Recôncavo. The superiority of the tobacco production of the Southwestern Recôncavo is more than a matter of hectares of cultivation or kilograms of leaf. The area is the core of the "Mata Fina" zone, within which the leaf of Cruz das Almas is assigned the highest price. [439] The "Mata Fina" leaf is the basis of the export of cigar tobacco to European markets. In its concern with cacao, the most valuable export, [245] [439] Bahia tends to forget the important role which tobacco plays in its economy, and with this, so the people of the zone sometimes feel, to

249 433 [245] [439] neglect the critical tobacco producing areas. It seems to be true that the chief recipients of political and economic attention have been the traditionally important sugar cane area, and more recently the cacao [491] zone. The people of the tobacco area complain particularly about the lack of roads.

244 433 Not only is manioc the basic source of subsistence for the Recôncavo, it is also the second crop in value of production. Its cultivation, as has been seen, is closely associated with the production of tobacco, so that the Southwestern Recôncavo, which produced 63 per cent of the tobacco crop, also contributed a very large part--48 per cent--of the total value of manioc (Map 121). However, manioc is important in its own right, as well as in its relationship to tobacco. No data are available to indicate the importance of manioc as a surplus product which is sold beyond the borders of the município in which it is grown. A rough estimate can be made by assuming that the per capita consumption of manioc is 400 kilograms per year--this is the mean consumption for the state of Bahia. Using this figure in conjunction with the population data, it is possible to estimate that in 1948 about 30,000 tons of surplus manioc was produced in the Recôncavo. Ninety per cent of this surplus was produced in the municípios of the Southwestern Recôncavo. [489] [494] It is significant that many of the trucks passing from the Southwestern Recôncavo to Feira de Santana and Salvador are piled high with bags of farinha de mandioca. The total value of commercial manioc would be about Cr.36,500,000, so that on this basis manioc is the fourth or fifth most valuable commercial crop of the Recôncavo. Using the above method of determination, it was found that several municípios adjoining the region also produced surpluses of manioc. The most notable of these were the four municípios adjacent to the Southwestern Recôncavo--Nazaré, São Miguel, Santo Antônio, and Castro Alves--which produced a

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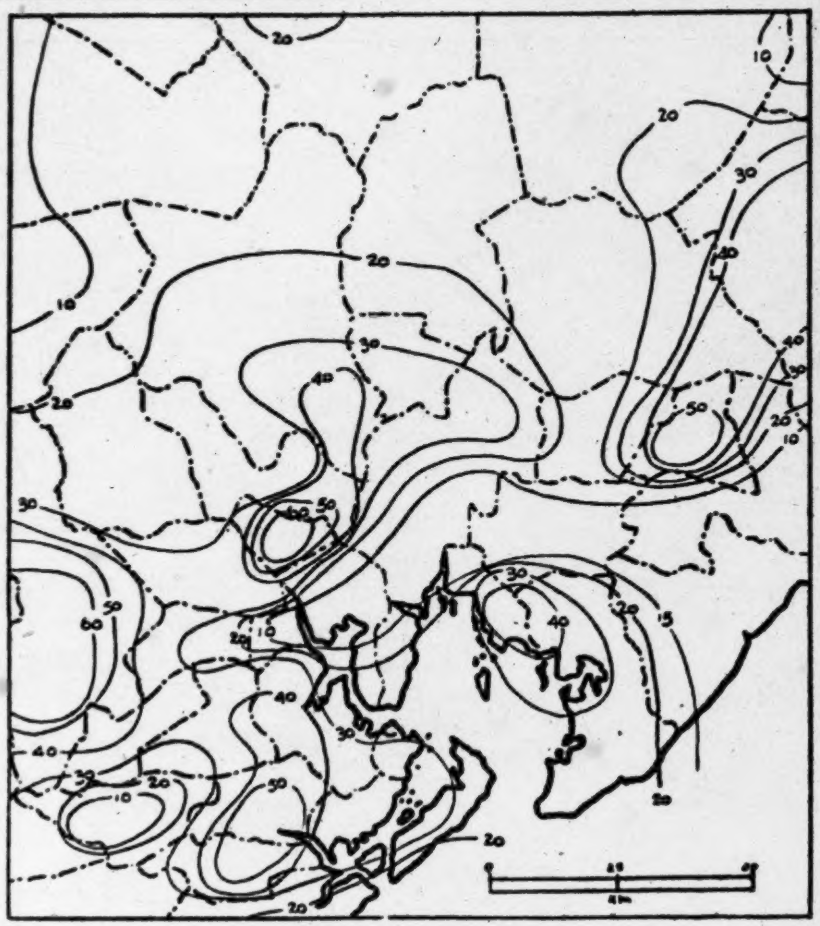
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RECONCAVO OF BAHIA

Per cent of the Total Value of Crop Production

Contributed by Manioc--1948

MAP 121

244 433 [438] 10,000-ton surplus. The surplus manioc of these *municípios* would appear to be marketed to the manioc-deficit areas of the Recôncavo, particularly
[249] the sugar cane area and Salvador. It is significant that those *municípios* which were the leading producers of tobacco were also the leading producers of commercial manioc (Map 123). Although the exchange and processing of tobacco in these areas is well organized and receives some attention from government bureaus, the growing and processing of manioc remains an unrecognized enterprise.

249 244 433 The importance of the production of tobacco and of commercial manioc to the various *municípios* of the Southwestern Recôncavo is shown in the following summary:

Município	Per cent of Total Value of Production	
	Tobacco	Manioc
Cruz das Almas	65	23
Conceição de Almeida	57	38
São Filipe	25	32
Muritiba	17	14
São Félix	54	-

One of the advantages of the relative balance of these two products is that in the event of a crop failure of one, the area would still have a salable commercial product. Moreover, since the production of manioc is relatively large, a moderate decrease in its yield would still leave this area with at least a minimum supply of food for its large agricultural population.

249 257 433 [654] Sugar cane is now the third crop in value in the Recôncavo, but it is maintained in that position only by government subsidy. It is a crop which either dominates the region in which it is produced or its cultivation is economically unimportant (Map 124). In part this is the result of the technological requirements of the sugar industry, which demand that large quantities of sugar cane be produced close to the mill so that the cane can be delivered quickly once it is cut. However,

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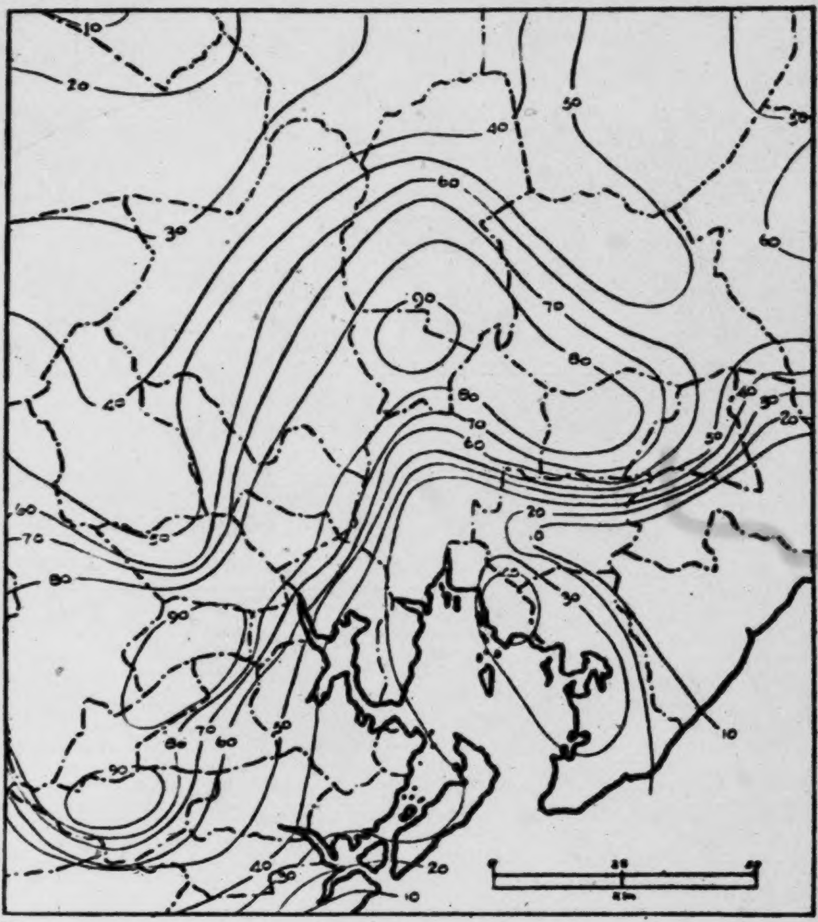
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RECÔNCAVO OF BAHIA

Per cent of the Total Value of Crop Production

Contributed by Tobacco and Manioc—1948

MAP 122

*102
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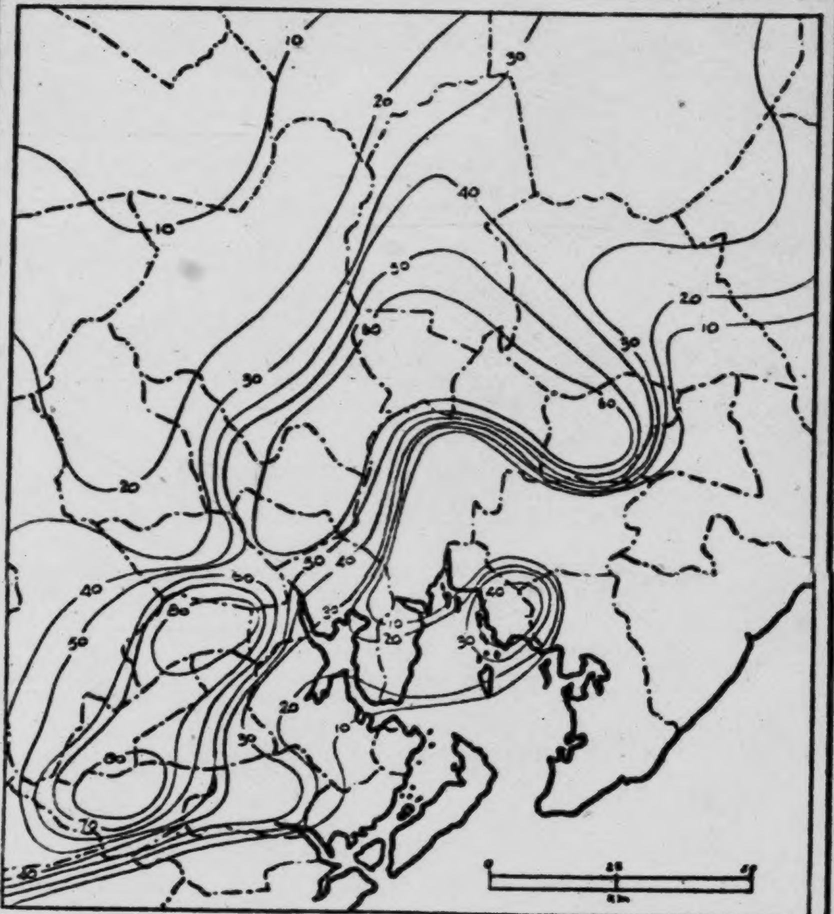
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RECÔNCAVO OF BAHIA

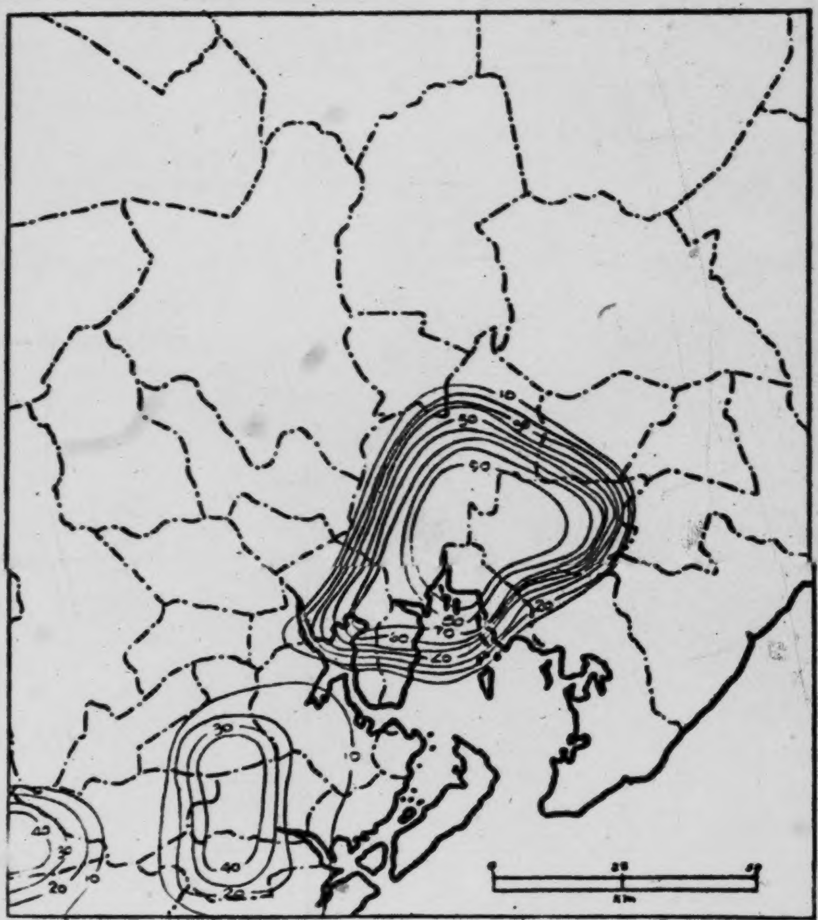
Per cent of the Total Value of Crop Production

Contributed by Tobacco and Commercial Manioc—1948

(Estimated)

MAP 123

*402
249
433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RECÔNCAVO OF BAHIA

Per cent of the Total Value of Crop Production

Contributed by Sugar Cane--1948

MAP 124

249 257 433 the large landholders and agricultural capitalists of Brazil have a strong historical bias toward monocultural systems.

249 433 471 As would be expected, the Central Recôncavo accounted for almost 90 per cent of the total value of sugar cane in the region. Sugar production in this area is dominated by the big *usinas*, and most of the cane is produced on very large properties, as has been seen.

243 244 433 438 Although corn and beans primarily are subsistence crops, they have, like manioc, some commercial importance (Map 125). The corn and bean areas within the Recôncavo do not produce outstanding surpluses, although these two crops are important commercial products in nearby Serrinha and Conceição do Coite. Most of the corn and beans of the Recôncavo are exchanged for *farinha de mandioca*, which provides the cultivator with a cheaper food.

244 245 433 438 The remaining crops of the region are of minor commercial importance, or are more valuable commercial crops of highly localized production. Bananas, peanuts, and sweet potatoes are minor commercial crops of diffuse production, since most of their cultivation is for subsistence purposes. Oranges, coconut, coffee, and pineapple are important but secondary commercial products whose production is concentrated in a few restricted areas (see, for example, Map 126 of coconut production).

249 244 245 433 438 The importance of the principal commercial crops--tobacco, sugar cane, coffee, coconut, oranges, pineapple, a few minor crops, and commercial manioc--varies widely from *município* to *município* (Map 127). However, two areas--the Central Recôncavo and the Southwestern Recôncavo--had highly commercial economies in which over 90 per cent of the total value of production was in commercial crops. In the tobacco-manioc area north of the Rio Paraguaçu, only one-half to three-quarters of
000 the total value of production was in commercial crops. Except in the

[TEXT CONTINUED ON PAGE 358]

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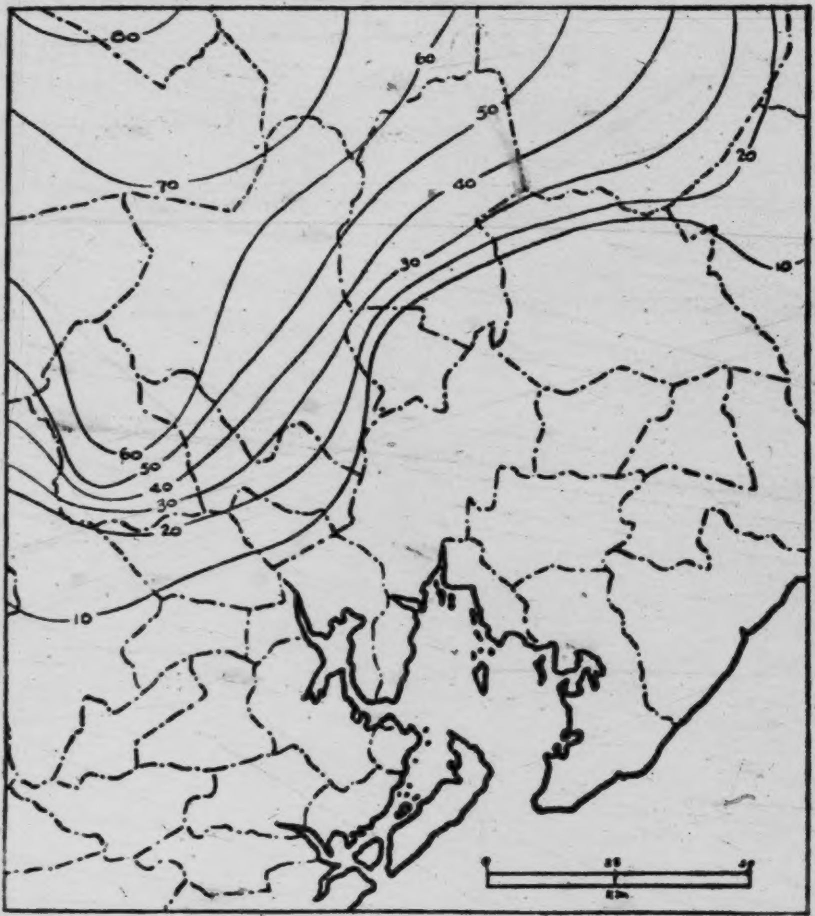
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RECÔNCAVO OF BAHIA

Per cent of the Total Value of Crop Production

Contributed by Corn and Beans--1948

MAP 125

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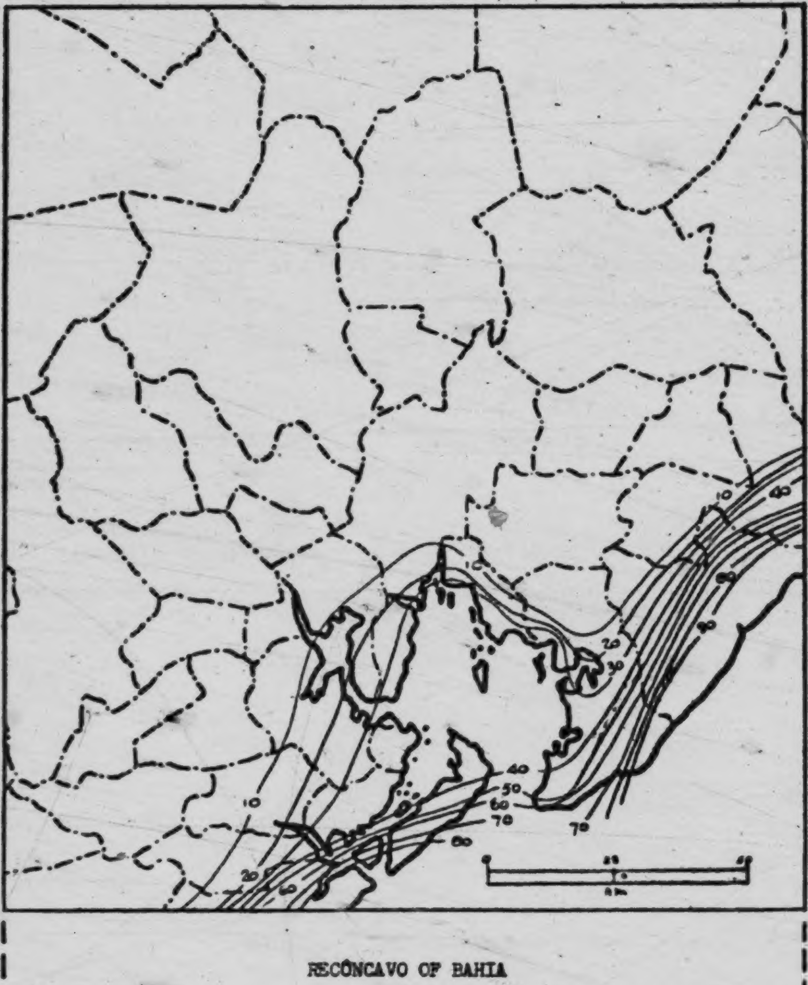
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RECÔNCAVO OF BAHIA

Per cent of the Total Value of Crop Production

Contributed by Coconuts--1948

MAP 126

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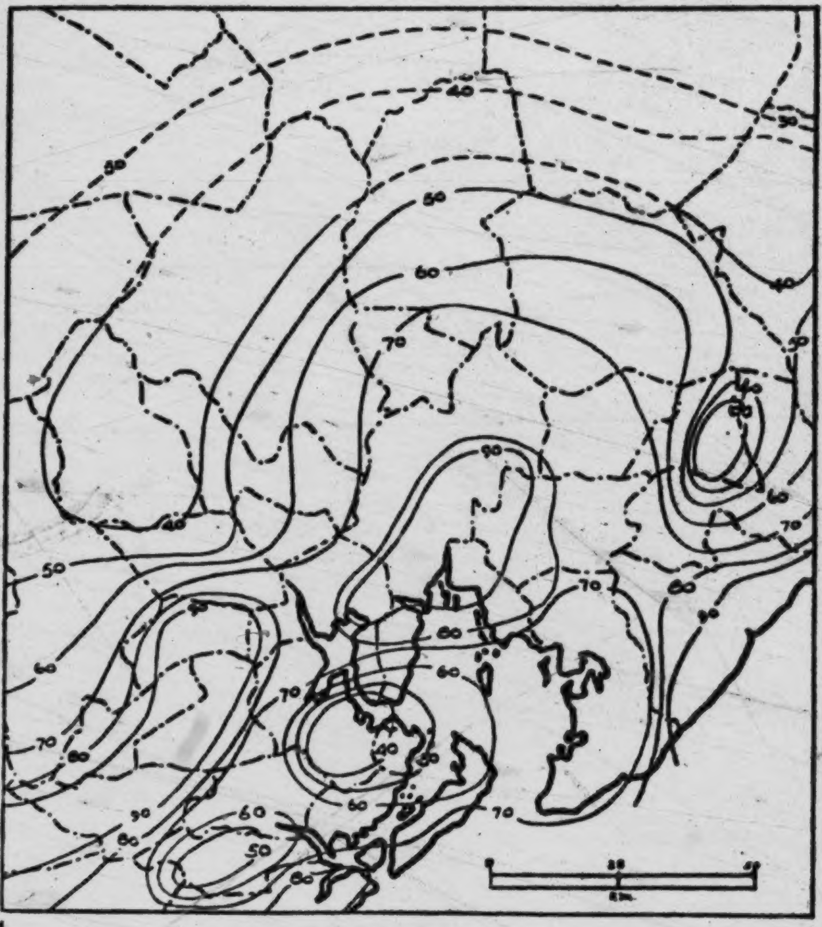
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RECONCAVO OF BAHIA

Per cent of the Total Value of Crop Production

Contributed by Commercial Crops—1948

MAP 127

Except in the
241 southwest and around Salvador, commercial crops produced only 40 per
433 cent of the total value of all crops. It is apparent that agriculture in the Recôncavo is by no means universally commercial. Moreover, in all parts of the Recôncavo except the sugar cane area, there are small agriculturalists who produce few commercial crops and are thus virtually subsistence cultivators.

241 The estimated value of livestock production was less than that of
231 crops in all areas of the Recôncavo except Feira de Santana, and, except
233
433 in Feira de Santana and Alagoinhas, less than half the value of crops (Map 128). In the chief commercial crop areas--Central and Southwestern Recôncavo--livestock production had about 10 per cent of the value of crops. These areas, on the evidence of value as well as land use and quantity of production, have highly commercial crop economies. Only Feira de Santana can be said to have a livestock economy, and in this area livestock production is concentrated around the *cidade*, and the rest of the *município* has a predominately crop-producing economy.

128 The table which follows (Table XVIII) summarizes the distribution
241 of the value of crops and animals in the principal regions and zones
231
233 of production. These areas accounted for 82 per cent of the total
433 value of agricultural production in the Recôncavo in 1948. The data of this table give further evidence of the tremendous economic importance of the tobacco-manioc and sugar cane regions to the Recôncavo.

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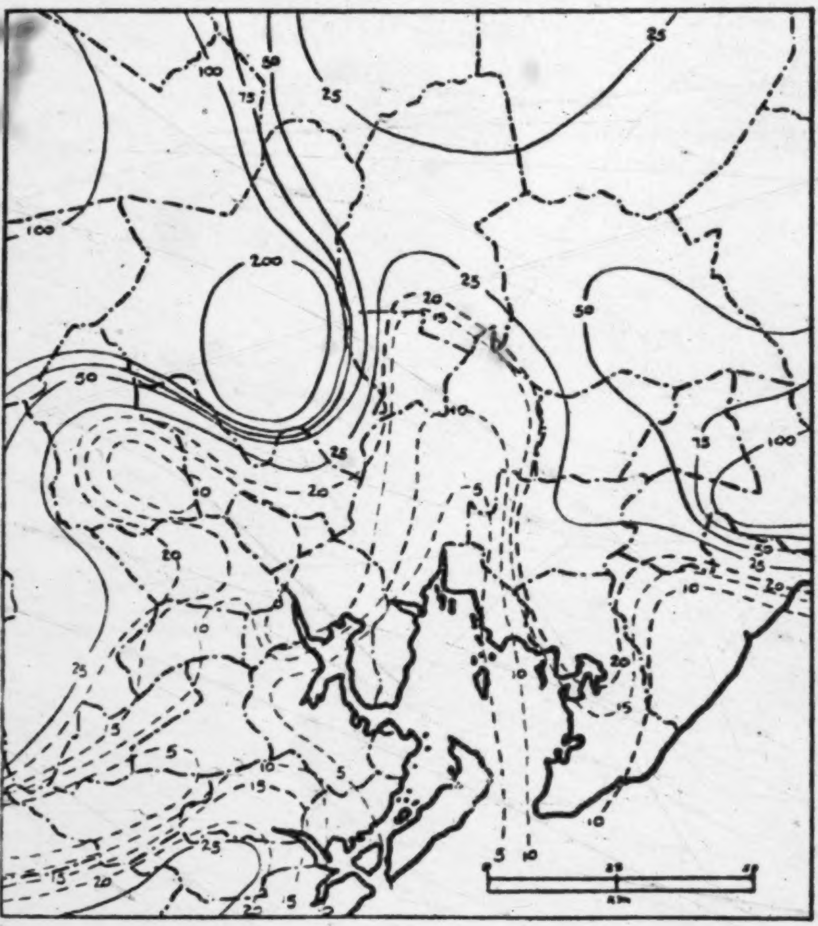
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RECÔNCAVO OF BAHIA

Value of Livestock Production as a Per cent of the Value of Crop Production—1948

MAP 128

TABLE XVIII

VALUE OF AGRICULTURAL PRODUCTION OF THE PRINCIPAL CROP REGIONS AND OTHER AREAS OF THE RECÔNCAVO—1948

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435

	Value of Production	
Sugar Cane Region (Sugar Cane & Animals)		
Main Area North of Bay		
Santo Amaro	Cr.$35,200.00	
Western São Sebastião	12,700.00	
Western São Francisco	4,700.00	
Total	52,600.00	
Cachoeira	1,500.00	
Southern São Filipe (no animals)	3,600.00	
Total—Sugar Cane Region		Cr.$57,700.00
Tobacco-Manioc Region (All Crops & Animals)		
In Southwestern Recôncavo		
Conceição do Almeida	26,400.00	
Cruz das Almas	57,700.00	
Eastern Muritiba	14,900.00	
Northern São Filipe	11,000.00	
São Félix	5,700.00	
Northern Maragogipe	3,300.00	
Total	119,000.00	
In Other Sub-Regions of Recôncavo		
Conceição da Feira	4,900.00	
São Gonçalo	11,400.00	
Feira de Santana	6,100.00	
Irará	9,300.00	
Coração de Maria	4,900.00	
Santo Amaro	17,900.00	
Catu	3,600.00	
Total	58,100.00	
Total—Tobacco-Manioc Region		177,100.00
Feira de Santana Livestock Area		16,000.00
Bay Margin and Suburban Areas		
Itaparica	6,900.00	
Salvador	8,900.00	
Maragogipe	1,000.00	
Santo Amaro	2,000.00	
São Francisco	4,200.00	
Total		23,000.00
Total		Cr.$273,800.00

Source: Calculations and estimates based upon Produção Agricola: 1948.

000 Footnotes - Chapter II

[127] [1] The data used in the discussion of the value of agricultural production have been drawn from the following sources: 1948 crop data--*Produção Agrícola: 1948*; 1948 livestock data--"*População Pecuária, Em 31/12/1948*;" 1940 crop and livestock data--*Recenseamento Geral do Brasil: 1940. Censos Econômicos*, Bahia, Vol. II.

[128] The modifications which have been made in the data taken from *Produção Agrícola*: 1948 are explained in Appendix D. The method used in estimating the value of livestock production in 1948 is explained in Appendix G.

CHAPTER X

MARKETING, TRANSPORTATION, AND PROCESSING OF AGRICULTURAL PRODUCTS

44 *Introduction.* The institutions of marketing, processing, and
transportation in the Recôncavo are of two basic types, local and re-
gional. Those which serve the local economies, that is, the *municípios*,
are traditional. These are the municipal market and the *casa de farinha*
[178] (manioc mill). The institutions which serve the regional economy--sugar
and tobacco processing plants and marketing systems--have their tradi-
tional element but have been extensively modified in the last half
489 century. Much the same division is reflected in the transportation
systems of the Recôncavo, for although the chief media within the local
economies are essentially traditional and primitive, the transportation
128 net of the region as a whole has a number of modern features. The dis-
cussion which follows will deal with the various institutions which have
developed in the Recôncavo to accommodate the marketing, transportation,
and processing of the more important agricultural products.

443 *Marketing of Agricultural Products.* Municipal markets play an
important role in the exchange of the agricultural products in the
Recôncavo as in most of Brazil. Large quantities of agricultural goods
are sold within the local area in which they are produced, and much of
this exchange takes place within the municipal market. The *feira* is
the regular open market which usually is held once a week in the
[366] smaller centers but somewhat more frequently in the larger cities. It
is usually housed in a public building, the municipal *mercado*. The
other type of municipal market is the *matadôuro municipâl* (slaughter

443 house). The municipal markets of the Recôncavo have a highly institutionalized character supported by long tradition. There have been [178] very few modifications in the local marketing system either to accept new products or to incorporate new techniques. Despite their highly institutionalized character, markets serve to accommodate and to re-enforce and stabilize the basic personal relationships between buyer and seller. Thus it is both difficult and misleading to approach marketing from a purely economic point of view.

Weekly markets (*feiras*) are held in every *villa* and *cidade* of the Recôncavo. Each of these *feiras* has a specified day and location. Usually the market of the *cidade* will be held on a different day than those of the *villas* of the locality, and usually adjacent *cidades* have their markets on different days. This arrangement facilitates the marketing of surplus products and makes it possible for itinerant buyers and sellers to travel from *feira* to *feira*. The market place [366] of most *cidades* and of the larger *villas* includes a public building [347] and the adjacent streets, and in some cases, a corral. Usually the market building itself is a large shed with open windows and doors, earthen or concrete floor, and no internal divisions except those provided by the pillars which support the roof. Stalls are sometimes provided in the newer or more pretentious buildings, but this is exceptional. Generally the market is located on a main square or a principal street. On the day of the *feira*, market activities expand beyond the main buildings and onto the streets, covering an area of about one city block in a typical center.

Participation in the *feira* is practically universal--the rural areas of the *município*, or the *distrito* if it is a *villa* market, are half emptied on market day. At sunrise or even earlier the farm families, or sometimes only the farmer, his wife, or child, begin

443 the journey to the market. The produce are carried by the individual
[492] or on the back of an ass or mule. By early morning all the roads are
thronged with the people of the countryside and their animals moving
toward the center. It is a gala social occasion in which the warm,
lighthearted personal relationships of the lower class *Baianos* are
evident. Upon arrival at the market, a cloth is spread on the floor
or ground in a customary spot, and the offerings of the people are dis-
played. Very soon the townspeople--chiefly housewives and servants--
enter the market area to inspect the offerings and haggle over their
[442] purchases of food and other agricultural products. Also moving through
the market are the wholesale buyers, both local and itinerant. As
their agricultural products are sold, the country people, too, begin
to circulate through the area to purchase goods and talk with their
friends and relatives. The market is a seething array of animals and
people weaving their way between the displays of produce. In the
smaller centers, most of the local products are sold by mid-day, and
the rural people begin their journey home, a trip of as much as
twenty kilometers.

443
438 The products which are generally sold in the markets of the *cidades* and *villas* are shown below:

Local Agricultural Products - Unprocessed

- Staples:
  - Corn, black beans, sweet potatoes, *aipim* (a sweet manioc used like white potatoes)
- Meat:
  - Fresh beef and pork
- Vegetables:
  - Such as onions, string beans, tomatoes, and local specialties
- Fruits:
  - Especially oranges, bananas (including plantains), papayas, and mangoes
- Coffee
- Coconuts
- Live Animals:
  - Especially chickens and pigs, but also draft animals.

443 438 Local Agricultural Products - Processed
- *Farinha de mandioca* (manioc flour)
- *Rapadura* (crude sugar)
- *Requeijão* (country cheese)
- Hand-made cigars.

Non-Local Agricultural Products
- *Azete de dende* (palm oil)
- Rice
- *Charque* (dried beef)
- Spices
- *Fumo em corda* (rope tobacco)
- Animals:
  - Especially draft animals from the *sertão*
- Leather.

Non-Agricultural Products
- Food - dried fish
- Extractive products:
  - Charcoal, honey, vegetable waxes
- Farm equipment:
  - Bridles, saddles, agricultural implements--hoes, knives, etc.
- Clothing:
  - Sandles, shoes, shirts, and trousers
- Pottery and kitchen utensils
- Miscellaneous cheap jewelry, plastic and wood products, patent medicines, cigarettes, straw mats, etc.

443 Those products of local agriculture which are not marketed through the *feira* or through specialized agencies are sold to the *vendas* (small general stores). In distinction to the *feiras*, which are confined to the villages and urban centers, *vendas* are found even in rural areas. These *vendas* are privately owned stores which sell staple foods, machetes and hoes, seed, household utensils, and a few simple luxury items, such as soap, candy, cigarettes, cigars, soft drinks, and alcoholic beverages. As would be expected, the *vendas* away from the urban centers carry but a limited stock of goods. There is usually a 443 452 continuing credit arrangement between the shopkeeper and the agriculturalist; most of the harvest of basic crops is pledged in advance against the debts of the cultivator, and frequently the crop is pledged even before it is planted. In many cases the shopkeeper is the agent for the tobacco buyer, in whose name the necessary credit is advanced.

443 Many shopkeepers are also land owners, and their tenants as a matter
[452] [427] of course are also their customers and their debtors. The livestock
raised by the agriculturalist may be sold on the hoof at the *feira*
or taken to the *matadôuro municipal* (municipal slaughter house). The
meat is sold either at the slaughter house or at the *feira*.

In the larger centers the market tends to last throughout the
week. In the medium-sized centers there are a few offerings each
morning, and often there is a small *feira* in the middle of the week.
Some major cities, such as Cachoeira, Feira de Santana, Santo Amaro,
and Salvador, have source areas larger than their *municípios*. For
[489] example, the market at Feira de Santana invariably draws scores of
[494] trucks, each laden with people and produce, from places as distant as
Cruz das Almas, Ipirá, Serrinha, and Santo Amaro. The most important
general market in the Recôncavo is the Saturday *feira* at *Agua de Meninos*
in Salvador. This market is located on the low-lying tidal flats
[505] beside the Bay, and many of the agricultural products which are sold
[489] here are brought by sailing boats. Trucks, carts, streetcars, trains,
[494] and pack animals are also used to transport produce to this market.
It is here that a very large portion of Salvador's population purchases
the agricultural products of the Recôncavo. This market is also the
source of supply of the street vendors who hawk fruits and vegetables
through the streets of the city. Salvador also has a smaller central
market—the *Mercado Modelo*—and a number of minor neighborhood markets
which usually are open for part of each day.

442 The *campo de gado* (cattle fair) at Feira de Santana is the only
443 important specialized public market in the Recôncavo; and, as has been
233 seen, it plays a very critical role in the agricultural economy of the
region and of the state. On Monday mornings thousands of cattle change
hands in the pens and weighing compounds at this fair.[1] Because the

442 *campo de gado* draws *vaquéiros* (cowboys) and ranchers from the *sertão*
443 as well as agriculturalists and buyers from the Recôncavo, the nearby
233 municipal market has a tributary area which is much larger than the *município*, indeed, much larger than the Recôncavo. The *sertão* and the Recôncavo exchange goods on a large scale in these markets. From the *sertão* come cattle and other animals, hides and skins, various extractive products, such as waxes, and the *fumo em corda* tobacco of the interior of northern Bahia. From the Recôncavo come food, especially bananas, coconuts, and sugar, and various manufactured articles which have been brought from South-Central Brazil via Salvador. Adjoining the *campo de gado* is an open lot where horses, mules, and all the accoutrements of the *vaquéiro*—bridles, saddles, and leather clothing--can be purchased.

249 A good deal of the sugar cane which is cultivated in the Recôncavo
471 is grown by the *usinas* on their own properties. In other cases the
438 cane plantations and processing plant are owned by different members of the same family, and the whole enterprise is operated on a profit-sharing basis. It cannot be said of either of these arrangements, which account for most of the cane harvested in the Recôncavo, that there is a genuine market situation. A truer market relationship exists for the few remaining *fornecedores* (suppliers) who grow cane and sell it to the *usinas*. Very commonly, however, these "independent" cane producers are indebted to the sugar company in both the economic and social sense. Moreover, the *fornecedore* is very much at the mercy of the company because of the lack of alternative markets and the difficulties of transportation. The cane which is purchased by the *usinas* on a contract basis must have a specified quality and must be delivered to the *usina* at its convenience by the supplier. It is likely that the mounting debts of many *fornecedores* will soon force them to sell

249 471 438 [171] their properties to the expanding usinas. This same process is taking place in most sugar areas of Brazil.

249 442 438 452 455 The marketing of tobacco centers on one key figure—the agent. With the resources of the tobacco company he extends direct credit to the larger tobacco producers and indirect credit to the small producers via his buyer, who is generally a local shopkeeper. The company grants a specified sum of money to each agent at the beginning of the season, and he disburses this at his own discretion. Bad debts are charged against the company rather than the agent. Most of the tobacco crop is pledged to the buyers in advance, by meahs of a formal contract or an informal agreement which specifies the price, quantity, and quality of the leaf to be delivered. Most of these contracts are entered into in order to secure credit; there are few agriculturalists who could produce tobacco without first receiving credit. There is much opportunity for speculation within the framework of this marketing system. Those buyers who are shopkeepers have in stock the supplies which the cultivator needs. The shopkeeper delivers the goods needed by the cultivator and retains the money which has been advanced by the agent. Since most of the stock of the buyer--storekeeper--has been purchased on credit, he may accumulate a considerable sum in cash or bills of exchange. Speculation is an acknowledged feature of the marketing of tobacco in Bahia, and in many cases the buyer uses the credit advanced by the agent for speculation in the tobacco crop. He does this by extending credit against the tobacco crop of cultivators who are not included in the normal relationships with the agent. Sometimes these debtors are unable to liquidate their debt, and the buyer is caught short. In this event he can use his position as the agent's representative and as a local economic power to recoup, at least partially, by forcing the price upward or through the substitution of cheaper leaf

249 in meeting his contract with the agent. The result of this and other
442 438 speculative practices is that the price of tobacco tends to spiral upwards
452 throughout the season.

455 The crop is delivered to the buyer in small lots—10 to 15 kilo-
249 grams--which are assembled, graded, and baled. The bales are taken to
276 438 the warehouse of the agent where they are added to other bales to form
442 a large pile in which fermentation can take place. After fermentation the bales are broken, and the leaf is re-sorted. With the better grades the sorting is done very carefully, and a large number of size and texture grades are separated. Intermediate grades are sorted less carefully, often by bundles rather than by individual leaves. The poorest grades are stripped without grading. After sorting or stripping, the leaf is again placed in bales and kept in the warehouse until transport can be arranged to deliver the tobacco to Salvador or to the cigar factories.

249 Most of the tobacco produced in the Recôncavo is exported. In the
433 439 years 1946 to 1950, inclusive, 166,676 tons of leaf tobacco were produced in Bahia and 128,567 tons were exported, so that about 75 per cent of the total crop of the state was exported.[2] However, the exported leaf is made up of the choice tobaccos, that is "Mata Fina," which are largely grown in the Recôncavo. It may be concluded from this that at least four-fifths of the tobacco crop of the Recôncavo was exported during this years. Tobacco exported from the Recôncavo normally composes 70 per cent of all the tobacco exported from Brazil. In value, the tobacco exported from the Recôncavo was less than 1 per cent of the total exports of all products from Brazil.[3]

482 492 Transportation. The backs of men and of animals are the basic
489 transportation media in the Recôncavo: almost all goods begin and end

482 492 their journeys thus, and many agricultural products are transported in
489 no other fashion from the site of cultivation to the ultimate consumer.
[491] In each of the *municípios* of the Recôncavo, as in almost all of Brazil,
there are extensive areas which are neither on nor near roads. In
these areas, but also along the highways and in the cities, men and
beasts of burden transport the products of the agricultural economy.
489 492 Long distance transportation, formerly dependent on animals, has been
493 changed in the last half century by the introduction of railroads and
177 178 more recently, automotive vehicles. In a similar fashion, both primi-
505 tive and relatively modern transport are used on the waters of the Báia
de Todos os Santos and of the various estuaries. Most of the agricultural products which cross the Bay are carried on open-decked sailing vessels and canoes, but there are also a number of motor vessels and motorboats which provide relatively effective transport from Salvador to all the *cidades* on or near tidewater.

492 In the tobacco-manioc region, and in rural Brazil generally, the
donkey or the mule is the characteristic beast of burden. On the backs
of these animals the bales of tobacco, the sacks of manioc and *farinha
de mandioca*, and the baskets of corn and vegetables are carried to the
market. The equipage of the donkey is simple--a halter and a rough
492 crosstree pack saddle with a thick pad of vegetable fiber. In the
493 sugar cane region the donkey is supplemented and, in most areas, almost
[171] supplanted by the ox cart. The ox cart of Bahia, essentially like the
carts used in other Brazilian sugar areas, is built of heavy wood, with a thick wooden bed and tongue, wooden axle, and solid wooden wheels about five-feet in diameter. This high, massive contraption has no bearings, and in dry weather especially it is frequently necessary to repair the wheels and axles. The ox cart is an admirable device for the Cretaceous lowland, for with its high wheels it can carry as much

492 as a ton of cane through the rain-softened clay. It is pulled, depend-
493 ing upon the load and the condition of the route, by four, six, or
eight oxen. It has no brakes, although occasionally a long pole is
used as a drag. The cart and the team are managed by two people, a man
who rides the cart, goads the wheel oxen, and shouts directions, and a
boy who runs in front and turns the lead oxen with a long slender pole.
As has been seen, a very large number of oxen are maintained on the
sugar cane plantations and the accessory ranches of the area. Donkeys
492 are used in the cane area for lesser tasks, such as carrying seed cane,
tools, and subsistence products; both horses and mules are used for
riding--usually the plantation foremen ride the patient, slow-moving
mules, while the owners and administrators ride the small, agile horses
which come from the *sertão*. In most other parts of the Recôncavo, in
the littoral forest and in the dry *caatinga*, the donkey and mule are the
universal beasts of burden.

491 One *município* of the Recôncavo--Coração de Maria--has no motor
[492] roads, and is thus served only by pack animals. The *cidades* of all
the other *municípios* are on highways of some sort, but usually only a
single road passes directly across the *município*. The back-country
487 of the *municípios*, which in this sense includes about nine-tenths of
the total area, is criss-crossed with a network of trails. Some of
these are wide enough for an ox cart, or in very good weather, for a
jeep to pass through. Many others are only narrow paths winding through
the second growth and passing between cultivated fields.

489
433 Land transportation between the various parts of the Recôncavo
438 has less direct agricultural importance than in the United States, since
so much of the agricultural produce is consumed within the *município*
439 in which it is grown. Those agricultural products, such as tobacco
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494 or sugar, which are destined for non-local or external markets are

[TEXT CONTINUED ON PAGE 373]

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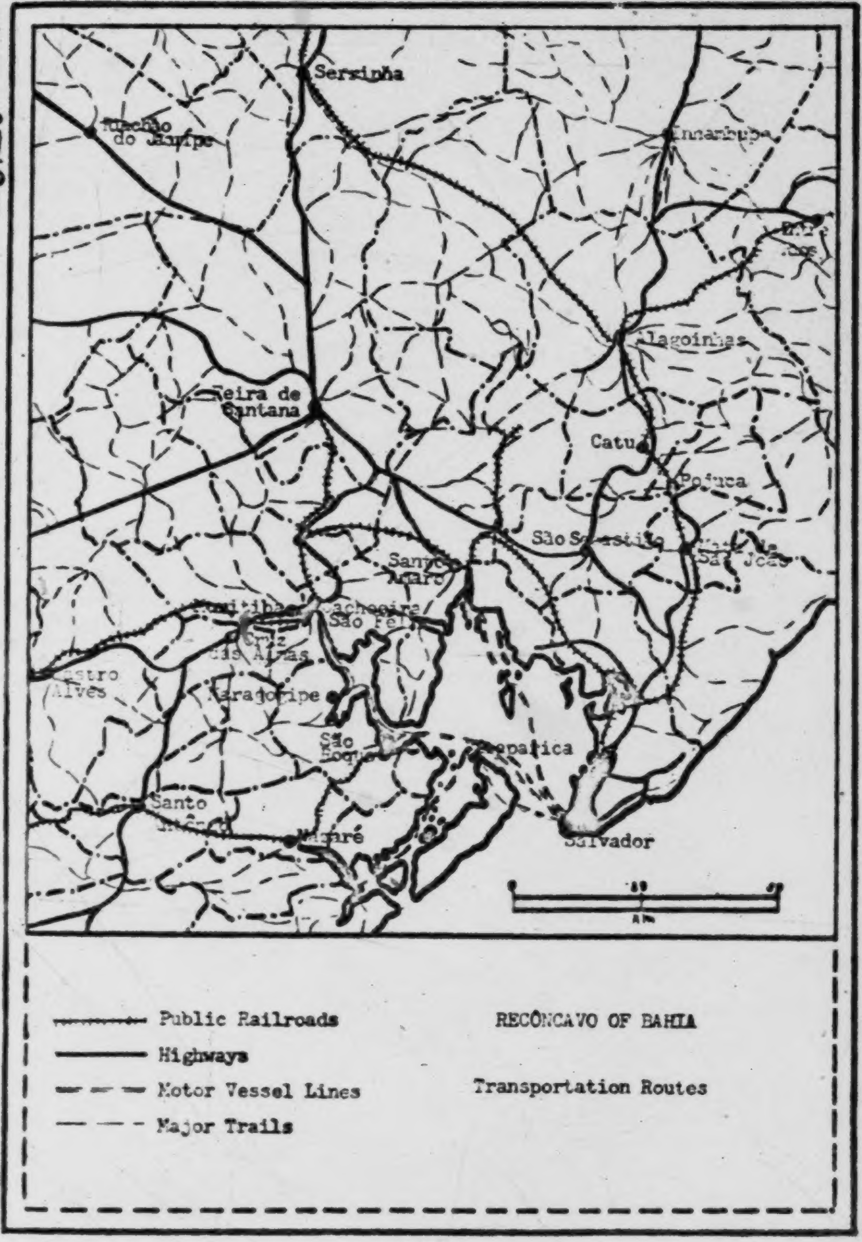
Serrinha
Riachão do Jacuípe
Inhambupe
Alagoinhas
Feira de Santana
Catu
Pojuca
São Sebastião
São João
Santo Amaro
Muritiba
Cachoeira
São Felix
Cruz das Almas
Castro Alves
Maragogipe
São Roque
Itaparica
Salvador
Santo Antônio
Nazaré
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20
40
Km
Public Railroads
Highways
Motor Vessel Lines
Major Trails

RECÔNCAVO OF BAHIA

Transportation Routes

MAP 129

439
497 usually carried by rail or by automotive transport. The operation of
494 the economy of the Recôncavo seems to require a constant movement of merchants, *fazendeiros* (landowners) and agents between the various *cidades*, and between the lesser urban centers and Salvador or Feira de Santana.

496
497 The two railroad systems which serve the Recôncavo and the adjoining areas are both narrow-gauge lines. The most extensive system belongs to the *Viação Férrea Federal Leste Brasileiro*, called the "Leste." It is part of a larger network which, in theory, connects Rio de Janeiro and the rest of the Central-South with the Northeast as far as Maceió in the state of Alagoas. Within the Recôncavo the main lines of the *Leste* stretch out from Salvador northward through Alagoinhas and westward through Cachoeira. A branch line of the latter runs to Feira de Santana.

The *Estrada de Ferro Nazaré* railroad crosses only the corner of the Recôncavo, but it runs for a long distance near the southwestern perimeter. The line begins at Jequié in the coffee zone and terminates at the *cidade* of Nazaré and at São Roque on the estuary of the Rio
[505] Paraguaçu below Maragogipe. These two terminals are connected to Salvador by motor vessels which attempt to coordinate their schedules with the trains. A rail link between the *Nazaré* line at Santo Antônio and the *Leste* at Cruz das Almas has been under construction for some years.

493
497 Most of the rolling stock of the *Leste* is archaic, but the *Nazaré* line has relatively good equipment. The woodburning locomotives used by both railroads are small but are kept in good repair and operate with reasonable efficiency. They are cheap and flexible to operate and, in view of the limited fuel resource of Brazil, seem almost ideal. The *Leste* has a diesel engine for the passenger train which operates between

493 Salvador and Feira de Santana, via Santo Amaro and São Gonçalo. The
497 *Leste* also has a special train of relatively modern type which runs from Salvador to Aracaju in Sergipe. As soon as electric power from the newly constructed dam at Paulo Alfonso on the Rio São Francisco is available, the *Leste* expects to electrify the line from Salvador through Alagoinhas. One of the most critical shortcomings of both lines is the very poor condition of the roadbed, so that derailments are relatively frequent.

497 Railroad fares are extremely cheap by the standards of the United States, so that for one or two dollars it is possible to travel all the way across the Recôncavo. Although there are many agriculturalists who cannot afford even these fares, rail transportation is within the means of merchants and buyers of the "service segment" of the agricultural population. Freight rates are higher but generally not excessive. However, there are many irregularties in the assessment of freight charges, and service is very slow.

The passenger operations of the *Leste* give relatively good service to the Central and Northwestern Recôncavo. In other parts of the Recôncavo the desultory passenger service of the *Leste* is little used.
[494] It is difficult to estimate the exact relative importance of railroads *vis à vis* trucks as freight carriers, but there is every indication that trucks carry most of the agricultural goods which are transported for long distances over the land. However, the railroads, which are
249 government owned, operate without regard to profit or loss. The main
499 and branch lines of the *Leste* play an important role in the sugar industry of Santo Amaro and western São Sebastião. The government tracks and the tracks of a number of private lines joined to them are used to haul cane from the plantations to the large *usinas*. The cane, which is delivered to the railroad line in ox carts, is hauled to the *usina*

249 on trains owned by the sugar company. In addition, much of the sugar, rum,
497 and alcohol which is manufactured by the big *usinas* is transported to Salvador
over the lines of the *Leste*.

493 As has been suggested, automotive transport has come to have great
491 importance in the Recôncavo, despite the lack of good roads, the high
cost of vehicles and fuel, and the competition of both boats and trains. No
491 *município* in the region can be said to have a road network, and usually
only the *cidades* and in a few cases large *villas* are connected with other
parts of the region. The principal road of the region is a dirt highway
which connects Salvador with Feira de Santana. Feira is an important transportation center for the Northeast of Brazil, for it is the southern terminus of
the *Nordestina*, the trunk highway which crosses the *Sertão*. The *Nordestina*
joins the main road to Rio de Janeiro and the road to Salvador at Feira de
Santana. A branch from the Salvador-Feira road turns southward and, passing through Cachoeira, São Félix, and Cruz das Almas, connects westward
to Castro Alves and southward to the cacao zone. There is also a road
from Salvador to Alagoinhas and other cities of the Tertiary zone farther
north. A few lesser roads feed into these three main highways--the most
important of these is the connection between Santo Amaro and the Feira
to Salvador road.

All of the main highways are two-lane dirt roads which are almost
always passable but which are extremely rough and are dusty in dry
491 weather and slippery when wet. The quality of the roads is probably
484 best illustrated by the time required to journey across the Recôncavo.
The road distance from Salvador to Cruz das Almas is about 125 miles;
the time required for a non-stop trip is 6 to 7 hours. It should be
added that despite the poor road conditions, traffic moves very fast,
and there are many accidents. To a very limited extent it is possible

491 for vehicles to pass from the main highways over the broader trails
484 to the nearby villages in good weather. However, this is rarely attempted except by jeep, and by these only infrequently.

249 Until the last few years a number of the large usinas in the main
499 sugar cane area have not been connected with the highways. Since jeeps and trucks have become more numerous in the Recôncavo, a number of the big usinas in Santo Amaro are constructing their own outlets to the
315 highway. In recent years the government-owned oil company has been
655 drilling exploratory wells in the cane fields of São Francisco. In
491
499 conjunction with this enterprise, new roads have been built, and for the first time many plantations of this area have road connections to the highway system.

494 Most of the traffic on the roads of the Recôncavo consists of
493 trucks and busses--private automobiles generally are found only in the urban areas, since cars are very expensive in Brazil, and the highways are very destructive. A large number of busses connect the outer Recôncavo with Salvador. The best passenger service, and the most expensive, is provided by a major bus line which has a daily run from Salvador to Feira de Santana and back. While this bus line employs large busses, most of the other busses used in the Recôncavo are small. These latter provide connections between the Southwestern Recôncavo and Salvador, and supplement the major Feira de Santana-Salvador service. The runs of many of these smaller busses originate outside the Recôncavo, but they collect and discharge passengers at each cidade. Fares are cheap, considering the cost of vehicles and fuel, but still somewhat more expensive than train travel.

Truck traffic is very heavy on the main highways, especially from Feira de Santana to Salvador. Probably most of the agricultural

494 493 products which are carried from the various inland municípios of the region to Salvador and Feira de Santana are transported on trucks. These trucks pick up their loads at the weekly markets or at warehouses in the various cidades. Frequently they carry passengers as well as cargo, and the cheapest passenger service in the Recôncavo is to be found high on top of a heavily laden truck. It is especially common to seem trucks loaded with bags of farinha de mandioca speeding over the rough roads with the cab packed and the less fortunate passengers enduring the dust or the rain outside. Most agricultural laborers seem to travel in this fashion on longer journeys within the region. Many trucks operate on an unscheduled basis from cidade to cidade, accumulating loads without pre-arrangement. However, there is some regularized service, for it is a general practice for trucks from all over the Recôncavo to travel to Feira de Santana on its market day, and the more important markets of other cidades are also served by trucks on a regular but informal basis. Each of these trucks has its destination marked on the window and collects a load of goods and people as it passes across the region. The cost of this means of transport to the individual depends upon the distance he travels and the amount of goods which he carries. Thus both truck and bus transportation play a major role in the marketing system of the Recôncavo, each carrying both goods and passengers.

494 651 438 One of the basic handicaps of automotive transport in the Recôncavo is that each município taxes the passage of goods transported on its roads. The repeated taxation of goods as they are moved across the boundaries of municípios may make it unprofitable for the agriculturalist to sell many of his products in the other markets of the region. Moreover, the lengthy stops required at each município boundary effectively slow down the movement of trucks and, to a lesser extent, of goods-carrying busses.

494 493 lesser extent, of goods-carrying busses. Another delay in movement of goods results from frequent breakdowns. A large number of broken down trucks are to be seen along the side of any of the highways of the Recôncavo. The most direct cause of these breakdowns is the universal practice of heavily overloading trucks--extra springs and blocks have been added so that they can carry enormous loads, but frequently the axles and tires fail on the rough roads. A contributing factor in the breakdowns is probably the scarcity and high cost of new parts.

Many merchants, buyers, and prosperous farmers make use of an additional passenger service which is provided between the urban centers of the region by automobiles in what might be described as a combination limousine and zone taxicab service. These taxicabs wait in a conspicuous spot, usually near the square of the city, with their destination and the total fare for the trip painted on the windshield. A perspective rider may pay the entire fare himself, wait for others who will share the expense, or himself secure other passengers. The fares are standardized, and the system is particularly oriented toward the important markets of the region.

505 The centrally located Baía de Todos os Santos and its estuaries are very important in the transport of both goods and people within the Recôncavo. A most conspicuous and universal sight is the myriad of sailing vessels which transport large quantities of agricultural products across the Bay to Salvador. There is no way of estimating the importance of this traffic in relation to the total amount of goods carried, but the vessels (saveiros) can hold as much as four or five

[501] tons of cargo. These boats are heavy timbered, open decked sailing vessels with a single mast—they do not sail well except before the wind, and therefore their trips are timed according to the direction of the wind. The saveiros seem to be very hardy and able to survive

505 abuse by the sea and by man. While some of these boats are used for [226] fishing in the Bay and in the ocean, their most important function undoubtedly is bringing food from the areas around the Bay to the city of Salvador. On the return trip, they carry building materials, [249] manufactured articles, and passengers. The usinas of the coastal [257] sections of the sugar cane area use these vessels to transport cane to the mill and to deliver the products of the mill to Salvador. Several of the cities on the Bay are very much dependent upon this means of transport, especially São Francisco and Maragogipe, which for all practical purposes have no road connections.

Motor boats serve to connect Salvador and the island of Itaparica. All of the tidewater cidades of the Bay and, in addition, São Roque do Paraguaçu and Nazaré are connected with the city of Salvador by scheduled motor vessels which carry many passengers and small quantities of freight. These vessels ascend and descend the estuaries with the tide. The head of navigation on the Rio Paraguaçu is Cachoeira, and on the Rio Sergi is at a landing on the outskirts of Santo Amaro.

489 241 433 These various transport media provide for the movement of people and goods across the Recôncavo. They are generally able to meet the immediate demands of the agricultural economy without excessive delays. The available media of transport are used to the fullest extent; busses, trains, and motor vessels are always crowded, and the trucks are always busy. However, the poor roads, the archaic railroads, the taxes on the movement of goods, and the high cost of vehicles clearly set a limit to the expansion or the intensification of the agricultural system. The rationalization of agriculture in the Recôncavo would require considerable expansion and improvement of the system of transportation.

249 252 276 Processing of Agricultural Products. Each of the three principal crops of the Recôncavo require processing before it can be consumed. Sugar cane and manioc are highly perishable, and both are processed in their entirety within the region. Tobacco, once it is fermented, can be stored for longer periods, so that there is no necessity for immediate processing within the Recôncavo. Sugar cane is processed in large usinas and to a lesser extent in engenhos (primitive sugar mills). Tobacco [277] products are fabricated in small-scale home industries and in factories. Manioc is converted into farinha de mandioca in very small mills.

249 489 471 The cultivation, transportation, and processing of sugar cane require an integrated system in which there is some form of centralized administration. The larger usinas own and operate most of the surrounding cane plantations and the associated transportation system, and administration is direct. Where cane is purchased from furnishers--privately-owned plantations--the mill specifies the type of cane which it will buy and the schedule of delivery. Most of the sugar cane in the Recôncavo is processed by usinas, which produce sugar, rum, and alcohol. However, there are a number of engenhos and a few smaller usinas which specialize in the production of rum or crude sugar. The engenhos are most important around the margins of the main sugar cane area north of the Bay and in Cachoeira and São Félix, but the usinas dominate the core area of cane production in Santo Amaro, São Francisco, and São Sebastião. Within the core area the big usinas generally are located near but not on the main railroads, although a few are situated near the shore of the Bay.

249 492 The harvested sugar cane generally is delivered to smaller mills by the grower, usually on ox carts. The larger mills receive their 249 499 505 cane via the railroad or the Bay. In these cases the cane is transported by ox cart from the cane fields to a weighing station, from

249 which it is hauled by railroad or boat to the mill, although sometimes
497
505 the cane which is carried by boat is weighed at the mill. The railroads
496 which handle the cane, as has been indicated, are owned and
471 operated by the usinas, except that the government right-of-way is
249 used whenever these tracks pass close to the plantations. One of the
usinas is new and a few of the older mills have some new equipment,
but the general level of technology is considerably below that of
Pernambuco or São Paulo, and the mills are somewhat smaller. The usinas
grind the cane, extract the juices, and refine the sugar by means of
vacuum pans and centrifuges. The more modern usinas produce a high
quality sugar, but in general the product is coarse and not a pure white.
274 The by-products of the large usinas and part or all of the cane juice
385 of some of the usinas and engenhos is converted into rum or commercial
262 273 alcohol. The sugar, rum, and alcohol from the sugar industry of the
438 Recôncavo are consumed primarily within the Recôncavo and the adjoining
439 regions of Bahia. About one-tenth of the production of sugar is
382 exported, chiefly to Rio de Janeiro. The commercial alcohol usually
385 is mixed with gasoline in the bulk plants in Salvador to provide fuel
654 for automotive transport. By law a specified amount of commercial
alcohol must be mixed with gasoline--this is designed to subsidize
the sugar industry.

249 471 There are twenty usinas in the Recôncavo, and these produced
433 an estimated 80 per cent of the total sugar of the state of Bahia in
1948. The three largest of these are owned by a single sugar company,
which also owns the associated plantations, transportation equipment,
and cattle fazendas. This company plays an important role in the
249 marketing of sugar from its own usinas and from other companies. The
471 concentration of the cultivation of sugar cane and of the production
178 of sugar in the hands of this single enterprise is a symptom of the

249 decline of the old system of independent plantations and small _usinas_ and
471 the rise of agricultural capitalism in the Recôncavo as in Brazil's other
178 sugar areas. With greater capital resources, drawn from Salvador, Rio de
Janeiro, and São Paulo, the large companies are slowly buying up the
fazendas of the core area of sugar cane production and are closing out the
small mills.

249 The typical _usina_ involves a large-scale organization of land,
471 transportation, processing, and labor by means of an administrative hier-
489 archy. Timing is one of the critical aspects in converting cane to a
finished product, for the harvesting of the cane and the operation of the
mill must be closely coordinated. A basic factor in this coordination is
the weather, which governs the quality of the cane, the transportation
of the harvest, and thus the operation of the mill. In dry weather the
[492] sugar content of the cane is high, and the ox carts move easily through
[493] the fields. In wet weather the harvesting bogs down, and the operation
of the mill comes to a standstill. Since the fixed costs of the mill and
the plantations are very great, delays in harvest are costly to the in-
249 dustry. Another important administrative problem for the industry is
464 labor. The sugar economy depends upon itinerant seasonal labor and
upon the declining local agricultural population. Occasionally the
operation of the mill is delayed because of labor shortages. It is some-
times necessary to shift labor from the fields to the mill or vice versa
or from one plantation to another and to balance the cost of maintaining
a labor reserve, if available, against the losses incurred when the op-
249 eration of the mill is curtailed. The scope of operation of the _usina_
471 may be illustrated by a list of the major physical equipment of one of
the large _usinas_ in Santo Amaro:

249
471
Land:
9,000 hectares in 19 plantations and ranches; each of the 15 cane plantations has a small settlement, livestock, and a weighing station.

Transportation Equipment:
25 kilometers of railway, 9 locomotives, over 100 railway cars, 4 trucks, 2 jeeps, and for each cane plantation an average of 10 ox carts.

Agricultural Machinery:
9 tracked tractors with accessory plows and grading equipment, 1 wheeled tractor, and on each cane plantation 4 or 5 ox-drawn plows.

Housing:
About 50 houses and miscellaneous service buildings for each cane plantation.

Processing Plant:
Grinding and extracting plant, distillery, power house, 2 warehouses, garage, railroad shop, and medical dispensary.

Miscellaneous:
Office building, houses for company manager and administrator, school for the mill settlement, and church.

249 The operation of such a large enterprise as this requires a large administrative staff. The administrative staff of the particular usina described above includes the following: a general manager for all properties; an administrator over all the plantations; an administrator in charge of the mill; a sub-administrator over each group of four or five plantations; and an overseer and several foremen for each plantation. There are also a number of supervisors in the mill and on the
249 railroad. In addition, the usina pays the salary of the teachers in
466 the local school, engages the priest for the irregular services which are held in the church of the usina establishment, and in conjunction
[178] with several other nearby usinas, employs a doctor. These activities reflect the desire of the sugar company to stabilize labor relations through social services, but on a more impersonal basis than was characteristic of the feudalistic sugar system of the nineteenth century.

258 Manioc can be converted into a staple food which is easy to transport and store by simple processes and small-scale enterprizes.

258 407 The manioc mill, called a casa de farinha, is found in most parts of the Recôncavo except the sugar cane zone. At the mill the root of the manioc is scraped with a knife in order to remove the rough skin. It is then shredded by being held against a roughened rotating cylinder which is turned by a belt attached to a large wheel and crank. The crank is rotated by one or two workers, except in the few mills where small electric motors are attached. The shredded manioc, which has the appearance of moist sawdust, is shoveled into a press made of a hollowed log, and a lid is forced into the press in such a way that the juices [401] are expelled through the holes in the sides and bottom. The necessary force is applied by means of a long lever drawn down with a large wooden screw jack. After the lid is forced downward as far as possible, the pressure is maintained until there is no perceptible leakage of 258 poisonous juices. In none of the mills observed in the area or described [171] in the literature of the Recôncavo was the leaching process used, as is the practice in some other areas of Brazil. From the press the manioc is thrown upon the top of an earthenware stove where it is agitated until the remaining manihotoxine is volatilized and the flour is dry. The juices which have been expelled from the press usually are caught in flat pans which are then placed in the sun. Settling and evaporation produce a pasty residue of starch--tapioca--which is dried into thin sheets.

These mills are small, one-press operations carried on in enclosed adobe and thatch sheds. They are scattered over the countryside wherever manioc is grown. The 1940 census enumerated 200 casas de farinha in the Recôncavo, but the number must now be a good deal greater. In 1940 Cruz das Almas, according to the census, had no farinha mills, but in 1953 more than a dozen were observed. The number of mills is large not only because the capacity of each is limited

258 but also because the manioc roots are too heavy and bulky to be transported over long distances. Moreover, the market for *farinha de mandioca*
[438] is generally local, except in the Southwestern Recôncavo.

258 The capital investment in a *casa de farinha* is small, usually
471 less than one hundred dollars, but this sum is far beyond the reach of
[454] most cultivators. The mills are built by owners of medium-sized land
holdings or local merchants, and are operated on a share basis. The
mill owner usually receives one-tenth of the finished product in exchange
[427] for the use of the mill equipment. The customer rents the equipment
[464] rather than the service and must therefore provide the labor, although
[592] the owner usually furnishes one or two workers. Generally the processing
[462] of manioc is a family operation in which the women and girls scrape the
roots and the men and boys perform the more arduous tasks.

277 Most of the tobacco which is grown in the Recôncavo is exported
[439] in the form of leaf. Therefore, the processing of tobacco is less
important in relation to the cultivation of tobacco than is the processing
of manioc and sugar in relation to their respective cultivation. The
leaf tobacco which is retained in the area is made into cigars in home
industries and in a number of cigar factories. The home-produced cigars
are made by tobacco cultivators and small-scale processors in the
villages, towns, and cities of the region. These cigars are generally
[443] very cheap and are sold in the local *mercado* (market) or in small
vendas (shops). It is difficult to assess the total importance of
this form of processing, but it seems likely that the number of cigars
so made is extremely large.

277 The cigar factories of the Recôncavo are located in the *cidades*
of São Gonçalo, Muritiba, Cruz das Almas, and Maragogipe. Each of the
[464] factories employs from 100 to 200 workers, usually women from the
surrounding area. Machines are used to produce the cheaper grades;

277 the more expensive varieties are hand made. The fillers and inner
wrappers of the cigars are made from local tobaccos. Local leaf also
[439] is used to a very limited extent for the outer wrappers, but almost
all of the high quality cigars are made from wrapper leaf imported
[471] from Havana, Sumatra, or the Connecticut Valley. The ownership of all
the cigar factories is concentrated in three companies, all of which
[439] have their headquarters in Salvador. The cigars produced in the
Recôncavo are sold throughout Brazil.

182 Conclusion. Many of the features of the systems of marketing,
(43 transportation, and processing which are characteristic of the Recôncavo
44
184 are effective in unifying the region. In particular, the centralized
marketing and economic control of the production and processing of
tobacco and sugar draw both the tobacco and manioc region and the
sugar cane region closer to Salvador. At the same time, the differences
in marketing techniques and the separate channels of control which are
associated with these two products accentuate the sub-regional pattern
182 of the two crop regions. The system of general marketing exemplified
438 by the municipal markets might at first glance seem to be a focus
443
184 for local rather than regional interests. However, as has been seen,
there are itinerant merchants who pass from market to market throughout the Recôncavo. Moreover, the major public markets, such as
Feira de Santana and Salvador, draw large numbers of people from most
of the rural sections. Even the local marketing institutions contribute to the identification of the people of this area with the
region.

000 Footnotes - Chapter X

[1] One source, Companhia Energia Electrica da Bahia, Rural Aspects of Bahia (Information Sheet No. 4. Bahia: Companhia Electrica da Bahia, [1931]), p. 17, states: "six to ten thousand head" each market day, i.e., each week.

[2] Instituto Bahiano do Fumo, Contribução do Instituto Bahiano do Fumo, pp. 15-16.

[3] Conselho Nacional de Estatística, Anuário Estatística do Brasil: 1949, Ano X (Rio de Janeiro: Serviço Gráfico do Instituto Brasileiro de Geografia e Estatística, 1950).

CHAPTER XI

CONCLUSION

128 In the preceding chapters the results of a statistical appraisal and a field investigation of agriculture in the Recôncavo have been presented. As a conclusion it seems appropriate to: (1) summarize the findings; and (2) discuss the potentialities of the Recôncavo for agricultural development

433 241 Like most of the densely-settled east coast of Brasil, the Recôncavo is engaged primarily in the production of crops. This is true not only of the region as a whole, but also of each of its individual parts excepting only the area around the cattle market town of Feira de
241 311 Santana. The total cultivated area of the region, about 6.4 per cent of the land surface, was almost evenly divided in 1948 between purely commercial crops--tobacco, sugar cane, coffee, oranges, and coconuts--and subsistence-commercial crops--manioc, corn, beans, bananas, peanuts, and sweet potatoes. About 70 per cent of the cropland was used for the three predominant crops--manioc, tobacco, and sugar cane. Livestock pro-
231 233 241 duction is associated with crop cultivation in many parts of the Recôncavo, but the region is also dependent upon the sertão of Bahia for livestock, which are driven into Feira de Santana and are used in several different areas within the region.

249 244 433 The three principal crops as determined by cultivated area--tobacco, manioc, and sugar cane--accounted for 77 per cent of the total value of crops in 1948, and no other crop accounted for more than
[231] [233] 6 per cent of the total value. Thus agriculture in the Recôncavo is primarily concerned with these three crops and with the production

249 244 433 of livestock, which had a value greater than sugar cane but less than
[231] [233] manioc.

Agricultural activities within the Recôncavo are localized in several distinct sub-regions, each with a specialized system of cultivation and each with either one or two principal crops. The primary agricultural subdivisions of the region are: (1) the sugar cane monocultural sub-region; and (2) the tobacco-manioc sub-region.

249 Sugar cane is grown as the exclusive crop in its major area of
production--the pocket of coastal plain north of the Baía de Todos os
Santos. Cane is generally cultivated under a four-year monoculture and
one-year fallow system on large properties employing large quantities
of hand labor and using oxen to draw plows and carts. Neither fertilizer
[407] nor agricultural machinery is used to any appreciable extent. Most of
[492] the animals used as labor in the production of sugar cane are brought
[231] [233] into the area from the *sertão*, and little livestock breeding is found
in this area. The processing of sugar cane is in the hands of a small
[471] number of medium-sized *usinas*. The companies which own these *usinas*
[178] are gradually buying up the plantations so that to an increasing extent
the mills directly control the production of sugar cane. Most of the
[497] cane is brought to the *usinas* by railroad, although sailing boats are
[489] used for this purpose along tidewater. Most of the sugar produced in
[505] [438] the Recôncavo is consumed within the state of Bahia, but small quantities
[439] are shipped to other parts of Brazil. Both the aristocratic upper class
[565] [471] and the rising non-aristocratic business interests of the Recôncavo are
[472] involved in the ownership and administration of the sugar industry. The
[464] permanent labor force is supplied from the settlements of the sugar cane
[178] plantations and the mills, but the rural population and the labor force
of the sugar area are declining. Seasonal labor for the harvest comes
from the interior *sertão* of Bahia.

249 311 Commercial sugar cane cultivation is confined to the humid Coastal
[134] Plain areas with Cretaceous clay soils, except for a small area in São
Filipe. Since the areas of Cretaceous clay soils are limited and compact,
sugar cane production is highly localized in two areas: (1) the
main sugar cane area in the municípios of Santo Amaro, São Francisco, and
São Sebastião; and (2) a smaller area north of the Bacia do Iguape in the
município of Cachoeira. There is a third area of less intensive production
in southern São Filipe.

249 244 The sole purpose of cultivation in the sugar cane area is the
[433] production of a commercial product, but the areas of tobacco-manioc
cultivation produce both a staple food and a commodity for sale outside
the region. Most of the tobacco and manioc of the Recôncavo are produced
under a land rotation system in which the sequence is: (1) tobacco;
(2) manioc; and (3) fallow in wild vegetation. The tobacco is planted
in small fields, usually after an application of manure. The entire
plant is harvested repeatedly until it will no longer produce a salable
leaf. Manioc is planted following tobacco, sometimes several times,
until the field is exhausted and abandoned to the second growth. The
fallow period is frequently short, sometimes as little as one year.
Cultivation is entirely by hand--no plows are used. There is very little
selection of seed, and only one variety of tobacco--Bahia Brasil--is
[423] produced. Tobacco and manioc are produced almost exclusively by small
[427] cultivators who are either owners or renters. Frequently livestock
[231] [233] are raised upon the properties of the cultivators, but except for the
use of manure in the cultivation of tobacco, there is little integration
of crop and livestock production. The leaf is harvested, dried,
276 and partially fermented by the cultivator. The marketing of tobacco
276 438 is inseparable from the credit arrangement between the cultivator and
[452] the tobacco buyer or agent. The leaf is delivered by the producer to
[488] the storekeeper-buyer or the local tobacco warehouse.

000 the storekeeper-buyer or the local tobacco warehouse. The roots of the
258 438 manioc are processed locally, in casas de farinha, and the farinha de mandioca is sold in the local market or to storekeepers in the nearby village or town.

249 244 The sub-region of tobacco and manioc production occupies the
311 humid eastern and southern edges of the Uplands. The chief center of
134 production, the Southwestern Recôncavo, occupies a zone of deep, sandy and sandy loam soils lying in flat-surfaced uplands above crystalline rocks. The northern parts of the tobacco-manioc sub-region occupy the rough, dissected southern edge of the sandy Tertiary taboleiros--in this northern area the production of both crops is less intensive than in the Southwestern Recôncavo. The area of primary tobacco and manioc production generally conforms to the forest and scrub forest transition and is expanding southwestward beyond the traditional Recôncavo along this
[433] physical boundary zone. The intensity of production is also increasing,
[178] but with violent year to year fluctuations.

241 In addition to sugar cane, tobacco, and manioc, other subsistence
433 and commercial products are grown in the Recôncavo. The most important of these are corn and beans, grown as commercial and subsistence crops in the north and west of the region, and coconuts, which are produced along the beach line. Bananas, sweet potatoes, and peanuts are grown in most parts of the Recôncavo, but on a small scale.

241 There are several areas in which there is little or no cultiva-
311 137 tion. The rougher Intermediate Hills, which are forested, separate the sugar cane sub-region from the tobacco-manioc sub-region. The lowland areas of Tertiary and crystalline soils are also forested and are cultivated under a non-intensive land rotation system with some associated
241 livestock. The Recôncavo is distinguished from the surrounding areas by its relatively greater mean intensity of cultivation. In the

BB
241 In the
231 surrounding *sertão* livestock production is the areally and, in many cases,
233 economically dominant activity; the Recôncavo is primarily a region of
crop cultivation.

BB
43 The Recôncavo is a functional unit in the economic organization
443 of commercial agriculture and marketing. Salvador, with one-third of
BB the people of the region, is the primary market center. The credit
[249] essential to the production of tobacco passes from the city to the countryside,
[452] while the leaf is either shipped to the city for export or is sent
BB
[249] to local cigar factories controlled by Salvador companies. Similarly,
the headquarters of the sugar industry and the chief market for its
products is Salvador. Feira de Santana is also a functional center for
the region, since in its markets the agricultural and industrial products
which either originate in the Recôncavo or are imported through Salvador
are exchanged for the livestock, crops, and extractive products of the
sertão.

B
BB Many of the features of the agricultural system of the Recôncavo
241 are also characteristic of Brazil. Both the land rotation system and
the permanent monoculture are basic Brazilian agricultural systems.
Agricultural technology, in the Recôncavo and in most parts of Brazil,
B
BB is relatively backward. Brazilian agriculture is labor extravagant,
[464] and there is a constant *falta de braços*, but with few attempts at
mechanization. Agriculture is highly speculative, whether tobacco in
B
BB the Recôncavo or coffee in São Paulo. The large property—latifundia—
[423] and the class organization with which it is associated are important
[565] in the region and in the country as a whole. There are large numbers
of semi-dependent small cultivators in the Recôncavo as in other parts
of Brazil. Both the region and the nation are very dependent upon
the sale of agricultural products to distant markets.

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The following assumptions underlie the discussion of the potentialities for agricultural development in the Recôncavo: (1) The Recôncavo, at least for the immediately foreseeable future, will remain a primarily agricultural region, i.e., agricultural production will remain the basic source of wealth. (2) Probably the region will continue to be dependent upon distant markets, either in central Brazil, Europe, or in the United States. (3) The population of the region apparently will continue to grow, as the result of the natural increase and probably as a result of continued migration from the sertão. If these assumptions are correct, two conclusions seem almost inescapable: (1) Commercial agriculture, at least partially oriented toward outside markets, will continue to be essential to the region, and, if imports are to keep pace with the growing population, will have to be expanded. (2) Greater food production will be necessary. It should be noted that these assumptions and conclusions are probably valid for Brazil as a whole as well as for the Recôncavo. Moreover, they are merely a restatement of the situation in which both the nation and region have found themselves for the last four centuries.

The two problems of food and export crop production are closely related--arable land is limited in the Recôncavo, and food production is necessary for the operation of the commercial agricultural economy. These two problems in their turn are inseparable from the physical and social context in which they exist. It is the particular advantage of agricultural geography that it provides the framework within which specific agricultural problems may be evaluated in relation to the relevant human and physical environmental factors. The discussion which follows will deal with the two basic problems of agricultural development under the following categories: (1) the sugar industry;

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241

128 (2) tobacco production; (3) manioc production; (4) the land rotation sys-
241 tem; and (5) alternative agricultural products.

249 For three centuries the sugar industry was the basis of the com-
471 mercial economy of the Recôncavo, and for the last century it has con-
tinued to play an important role. As a result of its long and profitable
history, it has a number of advantages as a basis for agricultural de-
velopment. Its capital assets are large--the best land in the region, a
number of industrial plants, and a transportation network. Moreover, its
[565] land is organized into large units, many of which are under the control
of a single company, and all of which are under the control of a small
group of the upper class. The industry has a large administrative staff,
the most experienced in the region in large-scale enterprises--the
organization of agricultural and industrial production, labor, trans-
portation, and finance. It has the very great advantage of good politi-
cal connections and government support. A part of the industry,
[242] composed chiefly of the largest usinas, has had some experience with
improved varieties of cane, and on a very limited scale with mechaniza-
tion.

249 Against these advantages are a number of limiting factors. Most
471 of the local capital of the sugar industry apparently is committed in
433 the present plant. The sugar economy of the Recôncavo is large scale
only in relation to the other agricultural enterprises of the region--
the mean daily capacity of the mills can scarcely exceed 500 ton.
Moreover, many of the mills are obsolescent--there is only one new
usina, and only the larger mills have very much new equipment. Despite
[464] the presumed administrative skill of the industry, labor has been one
[178] of the continuing problems since the deterioration of the old feudalistic
[466] employer-employee relationships of the late nineteenth century. However,

249 these individual shortcomings of the industry are less important than,
471 and to a certain extent derived from, three basic problems of the sugar
433 economy: land, market, and leadership.

249 Most of the area of Cretaceous soil in the lowlands of the
[311] Recôncavo presently is occupied by sugar cane or by the fallow fields.
Only those lands which are too wet or which are needed for settlement,
mills, or transportation are not used for cultivation. Thus there seems
to be little opportunity to increase the area of good sugar cane land.
It would presumably be possible to reduce the fallow period by lengthening
the period of ratoon harvests or to abandon the fallow period
altogether. If, as seems likely, these changes would reduce the yield
of cane, then it would be necessary to begin to use expensive imported
fertilizers in order not to lose the advantages gained by increasing
[242] the intensiveness of cultivation. The introduction of high-yielding
Javanese varieties of cane has already been attempted, but because of
climatic conditions, soil deficiencies, poor cultivation practices, or
a combination of these factors, yields remain below East Indian levels.
[134] It is theoretically possible that sugar cane cultivation could be extended
to the other soils of the lowland--the Tertiary sandy soils and
the crystalline soils of the peninsula and of the Intermediate Hills
west of the Bay. Both of these soils, however, are relatively infertile,
and the sandy soils are particularly unsuited for cane because
of their poor retention of water. Sugar cane cultivation is not
practical on the Uplands on account of the low precipitation—cane can
be grown in only a few damp valleys of the Uplands.

175 The second great disadvantage of the sugar cane industry of the
249 Recôncavo is in its market relationship. The history of the sugar cane
439 economy of the region may be summarized as follows. At the end of the
sixteenth century the forty engenhos of the Recôncavo exported 1,800 tons

249 439 [175] of sugar to Europe. This 1,800 tons of sugar was probably a very large part of the total world trade in sugar at that time. In 1948 the twenty usinas of the region exported 8,497 tons of sugar to the rest of Brazil, primarily to Rio de Janeiro and São Paulo. In this year the total international trade in sugar was about twelve million tons. Moreover, the Recôncavo was able to sell in the Brazilian market only by virtue of the support which has been given to the sugar industry of the Northeast by the Brazilian government. The European market has long been lost to the Recôncavo, and the chances of regaining any substantial part of it are not good--not only on account of the low level of efficiency of the Bahian sugar industry but also because of the local and foreign sources of sugar against which it would have to compete in the European market.

249 565 178 571 The third problem of the sugar industry is leadership, which is to say the problem of the Bahian upper class. The development of the sugar economy and of the aristocratic upper class of the Reconcavo are practically inseparable, and the decline of the former is in part a reflection of the inability of the latter to provide intelligent and progressive leadership. The institutions which were developed in the opening century of colonization for the production of sugar succeeded altogether too well as far as the region is concerned, for since then the industry has not succeeded in establishing a new pattern in conformity with the changing systems of technology and the new competitive situation. A century of failure either to develop an efficient sugar industry or to find new sources of income for the sugar area is a sign of the continuing failure of the upper class. More and more the leadership of the sugar industry is passing from the artistocrats to the new segment of the upper class, the agricultural capitalists. In most cases these men seem to have a broader view of the problems of the

249 industry than the aristocrats, as the partial rationalization of the
565 sugar system since 1900 testifies. However, the entry of even these
178 571 relatively progressive and forward-looking business men into an industry whose only future is that guaranteed by the protection of the government does not reveal a willingness either to accept short-term risks or to make an investment in the long-term future of the Recôncavo.

175 Tobacco, as has been seen, began its history as an auxiliary of
277 the sugar cane economy. The development of the commercial tobacco
433 439 economy since 1800 indicates a greater flexibility than is characteristic
[567] of the sugar industry. When the decline of the slave trade brought an end to the African market for *fumo em corda*, the tobacco economy turned
277 to a new product, *fumo em fôlha*, and to a new market, Europe. Unlike
439 the sugar of the Recôncavo, Bahian tobacco has been able to compete successfully in the European market against leaf imported from Cuba and from Sumatra. Moreover, the leaf tobacco of Bahia dominates the internal market of Brazil to a degree not equaled by the local sugar industry for several centuries.

There are several possible explanations for the relatively
277 472 greater flexibility of the tobacco economy. Several of the more promi-
249 178 nent firms in the manufacturing of cigars and in the export of tobacco have foreign origins or are owned by people of European background. Indirectly these firms may have affected the operation of the tobacco economy, but it is difficult to find any signs of significant changes in the methods of cultivation. On the other hand, the tobacco industry and trade seem to have been spared the unimaginative and inflexible leadership which the aristocratic upper class of the Recôncavo has given to the sugar industry.

249 Tobacco cultivation by its very nature is more flexible than
[457] the system of sugar production. Instead of the *usina*, which must be

249 purchased in Europe at the expense of precious foreign exchange, tobacco
[457] can be processed for the trade with only a shed and a few crude presses.
[489] Rather than a relatively expensive rail net to assemble the crop, tobacco
can be carried by truck, small boat, or even by pack animal. Moreover,
[433] since the cultivation of tobacco is integrated with the production
of food and is primarily an activity of small farmers, it is possible to
adjust the size of the crop from year to year with a minimum sacrifice
of capital investment.

277 The tobacco industry of the Recôncavo has a number of disadvantages
as a base for commercial development which may be summarized as
problems of: (1) land; (2) markets; and (3) system of production.
249 Leaf tobacco production in the Recôncavo and in the adjoining areas of
311 Bahia is confined to a narrow belt between the humid edges of the Uplands
[134] and the dry interior of the state. An expansion toward the coast
would bring tobacco first into the Intermediate Hills where the upland
soils which are preferred for tobacco cultivation are of limited area
and then into the humid lowlands in which the Cretaceous soils are
unsuitable, apparently, for the cultivation of quality leaf tobacco
[132] and in which the Tertiary soils are extremely infertile. An expansion
westward would bring tobacco into an area where the precipitation in
[134] most years is inadequate. The interior north of the tobacco area is
dry and has very poor soils, the Tertiary upland soils. There is an
[137] opportunity for the further expansion of the cultivation of tobacco
toward the southwest along the forest and scrub forest boundary into a
region which produces the same general type of tobacco as the Southwestern
Recôncavo--the "Mata" grade. This apparently is the meaning
of the increased tobacco production in Santo Antônio. It should be
possible, at least as far as the soils and climate are concerned, to
continue the expansion toward the southwest into the adjoining

249 311 [245] municípios. However, in this southwestern area the amount of flat land is progressively reduced as the serras of the coffee zone are approached. Moreover, this region is already occupied by the other commercial systems--coffee, and in a few areas, sugar cane. Thus tobacco would not be moving into an area in which it could have either the land or the labor force without a struggle.

277 439 Leaf tobacco has a number of disadvantages as a primary commercial product. The Brazilian market for Bahian tobacco is not yet large enough to stabilize the price during years when it is impossible to sell leaf abroad. In Europe the tobacco of Bahia must compete with leaf from other parts of the world, and because the Recôncavo has not yet succeeded in producing a suitable high quality wrapper leaf, it cannot hope to secure the whole market no matter how great its quantity of production. One of the possibilities which is being considered by the tobacco industry is the production of wrapper tobacco, but the experiments which have been completed so far have not been highly successful. Even if the quality of the tobacco were improved, one basic market problem would remain—tobacco is a luxury product, and many countries find it possible to do without it in times of war or economic distress.

249 The basic problem of tobacco production in the immediate future seems almost certain to be the system of cultivation and the land system with which it is connected. As has been seen, in the main centers of production the fallow period is already extremely short. It is not unlikely that the cumulative effect of too short a rotation period under a system of land rotation will reduce the fertility of the soil to a point where normal second growth will not develop and where land rotation, especially with so demanding a crop as tobacco, will be impossible. Moreover, if the intensity of tobacco cultivation should increase, then it seems inevitable that the density of livestock within

249 the crop region would decline and that manure, essential to the produc-
tion of tobacco, would become even more expensive than at present. Any
increase in the intensity of tobacco production would probably decrease
the production of manioc, so that both the sub-region and the Recôncavo
would have an even greater food deficit than at present.

241 The system of land rotation is clearly one of the basic prob-
lems of the Recôncavo. As the population of the region grows, the
problem of the system of cultivation will almost certainly become pro-
gressively more acute. One solution which is being proposed by the rural
missions of the Ministry of Education is the use of composting as a
[108] substitute for manure. As yet the results of the mission program is not
clear, but it is obvious that the resistance and the apathy toward new
agricultural ideas in the region are very great. As far as could be
ascertained, mixed agriculture has not been suggested as a solution to
the problem. Indeed, in view of the lack of additional land for the
production of forage crops or of grasses, it is difficult to see how
such a proposal could be implemented.

242 It is apparent even to the casual observer that there are some
alternative crops which might be produced in the Recôncavo. From time
to time the agricultural experiment stations and a few enterprising
[243] land owners point the way. One example is the production of corn as a
commercial crop in the northern part of the município of Muritiba. At
[312] the price of corn prevailing in 1953, it was believed possible to produce
the crop profitably using irrigation water pumped from the Rio Paraguaçu,
and a single landowner was making the attempt. Obviously there are no
large areas in the narrow valley which can be irrigated, nor is the
water supply great. It is, however, suggestive that it is possible to
produce a staple food crop at as great a profit as tobacco. In the

242 [245] In the sugar cane zone there has been one small scale experiment with white cacao, which can be sold at a higher price than the ordinary variety. It is believed that this crop would do well on the soils now under sugar cane and perhaps on some of the other soils of the lowlands. Since cacao in the Recôncavo presumably would be free of the diseases which cause so much difficulty in the main area of cultivation along the southern coast of the state, it might be possible to stabilize Bahia's cacao production and at the same time to improve agricultural conditions in the Recôncavo. [243] Another alternative use for the Cretaceous soils of the sugar cane region might be for the cultivation of rice, which is presently grown on a small scale in Santo Amaro. In view of the perennial shortages and high cost of food in both the Recôncavo and in Brazil, such a generally acceptable food should find a ready market. On the other hand, the development of cacao or rice cultivation in this area would mean the abandonment of the heavy investment in sugar mills and plantations.

241 178 Although the evaluation of specific suggestions is the province of the agricultural specialist, one fact is clearly shown in the results of the present research—any proposal for the future development of the Recôncavo will have to conquer the inherent traditional orientation of agriculture in the region.

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APPENDIXES

APPENDIX A

Sub-Regions and Municipios of the Recôncavo

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Central Recôncavo:
- Santo Amaro
- São Francisco
- São Sebastião
- Cachoeira

Northern Recôncavo:
- Coração de Maria
- Irará
- Alagoinhas

Northwestern Recôncavo:
- Feira de Santana
- São Gonçalo
- Conceição da Feira
- Santo Estêvão

Southwestern Recôncavo:
- Muritiba
- Cruz das Almas
- Conceição do Almeida
- São Filipe
- São Félix

Eastern Recôncavo:
- Catu
- Pojuca

Southern Recôncavo:
- Maragogipe
- Itaparica
- Salvador

APPENDIX B

Geologic Structure

133 135 The Archaean granites, gneisses, schists, and metamorphics are the most common surface rocks in eastern Bahia, where they form part of the so-called crystalline peneplain of Northeast Brazil. The Baía de Todos os Santos and the sedimentary lowlands and uplands north of the Bay occupy a rift in the crystalline platform which extends northward beyond the borders of the state. This rift runs through the center of the Recôncavo and is occupied in the south by an arm of the sea and in the north by sedimentary rock. On each side are crystalline zones, extending far beyond the Recôncavo to the west, but limited on the east by the sea.

[134] In the rift zone the upland deposits primarily are Tertiary, but where erosion has cut deeply, as it has north of the Bay and in major valleys such as that of the Rio Inhambupe, the underlying Cretaceous material has been exposed.

In a few places on the crystalline platform, especially south of the Rio Paraguaçu, there are small remnants of the Tertiary sediments.

APPENDIX C

Sources of Population Increase

161 In the demographic analysis increase in population generally has been discussed without regard to its source. There are two possible sources: (1) immigration; or (2) growth of local population through the excess of births over deaths.

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167 Although exact data for immigration into the Recôncavo is lacking, it is probably realistic to disregard sources outside the state of Bahia. The 1950 census gives 144,055 as the number of people in Bahia who were born in other Brazilian states, but shows 430,217 natives of Bahia who were resident in other states. In general, the state of Bahia is the source, not the destination, of a current of migration. The principal origin of this current apparently is the back country of the state, not the Recôncavo. Immigration from other countries is negligible.

It may be inferred that the Recôncavo had a net gain as a result of intra-state migration between 1940 and 1950. The extent to which this gain was permanent is not clear.

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161 The birth rate of Bahia has been estimated at 42 or 43 per thousand, while the death rate of Salvador has been estimated at about 27 per thousand.[1] This suggests that the rate of population increase must be relatively high. On the basis of a population increase of 15 per thousand, the 1940 Recôncavo population of 924,032 would have been 1,060,372 by 1950.

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[1] Características Demográficas do Estado da Bahia, pp. 285, 295. Since death records are not available in many parts of the interior, death rates ordinarily are available for the capital cities only.

APPENDIX D

Changes in Crop Data

241 433 127 128 [659] The crop data in Produção Agrícola: 1948 were gathered by statistical agencies of the Instituto Brasileiro de Geografia e Estatística established in each cidade of Bahia and of most other states in Brazil. The quality of statistical data assembled is highly variable, depending in part upon the efficiency of the agent but also upon the size of the município and upon whether the products are easily assessable, or are marketed locally, and a number of other factors. In a number of cases it has been necessary to modify obviously erroneous parts of the official data, which were sometimes contradictory and sometimes at variance with the agricultural pattern as determined by field investigation. This usually has been done by interpolating from other more creditable data from the same basic source or from other sources. In the following pages the important changes which have been made in the data for various crops will be discussed, and maps based upon the original data will be presented.

When the data for area, production, and value were combined to determine yield and price, and these relationships were mapped, certain obvious errors and a number of clues to the direction and extent of error were discernible because the general outline of price and yield pattern in the Recôncavo was clear. Generally one of the three base figures--area, production, or value--was accepted as valid and the others adjusted to bring yield and/or price into line. Because of an almost complete lack of property surveys, the crop area data are at best a gross estimate and liable to great error. On the other hand,
[443] [659] the location of the statistical bureau in the cidades, usually the primary market, does give opportunity to make reasonably close estimates of value and production, at least of marketed crops.

241 of value and production, at least of marketed crops. The choice between
433 value or production as a base figure for correction was dependent upon
127 the individual case and the generally expected pattern of price and
128 yield.

244 _Manioc_. The basic shortcomings of the manioc data were clearly
433 revealed when area and production figures were combined to show yield.
127 While the mean calculated yield for the Recôncavo was 16.3 tons per
128 hectare, the mean calculated yield for individual _municípios_ varied from 5.3 tons per hectare for Salvador to 39.0 tons per hectare for São Filipe (Map 130). Certain variations, related to precipitation, soil, and intensity and care of cultivation, are to be expected, but the yield maps revealed incredible contrasts. Especially noteworthy was the case of São Filipe, with its yield of 39 tons per hectare. Adjoining Cruz das Almas and Conceição do Almeida, with similar and if anything more efficient practices of cultivation and with similar soils and climate—especially since most manioc in São Filipe is grown in the area adjoining Cruz das Almas and Conceição do Almeida—produced only 14 and 10 tons per hectare, respectively. It was apparent that at least one element in the São Filipe data was in error. The other _municípios_ with exceptionally high yields--São Francisco, with 34.5 tons per hectare, and Santo Amaro, with 25.3 tons per hectare--probably can be explained by high productivity when manioc is grown on a small and intensive scale on the more fertile clay soils.

In São Filipe the yield calculated from official data was three
[435] to four times that of the surrounding _municípios_. Moreover, the unit value per ton was Cr.$60, compared with Cr.$150 to Cr.$200 for adjacent areas. The conclusion that the production figure was an error was re-enforced through a comparison of the density of production in

[TEXT CONTINUED ON PAGE 409]

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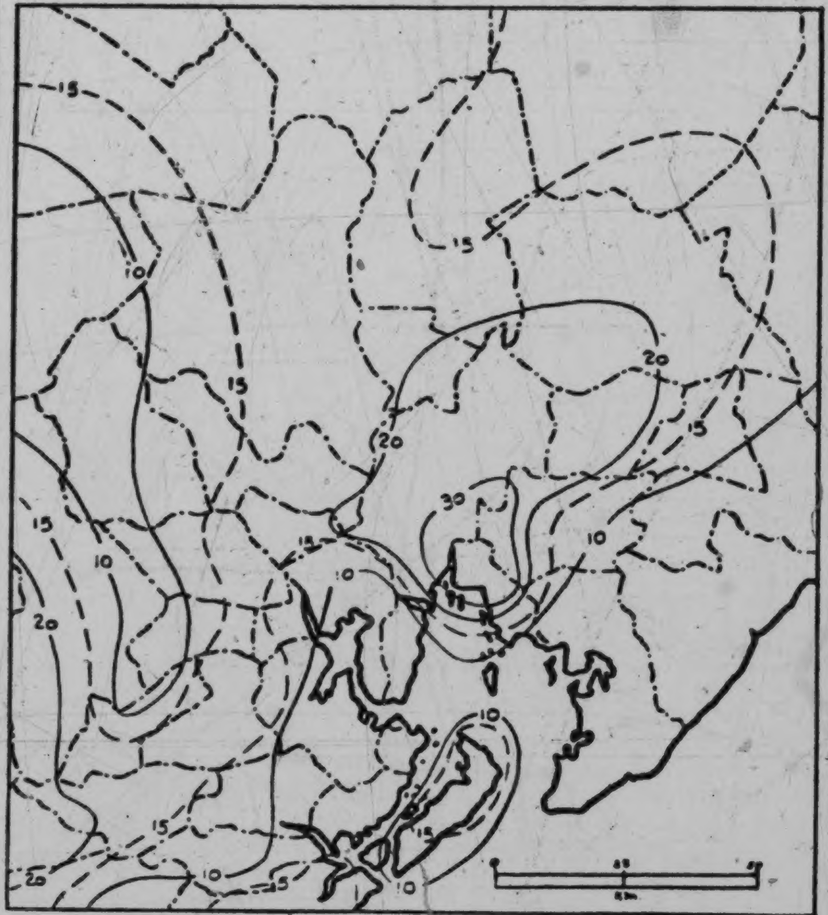
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RECÔNCAVO OF BAHIA

Yield of Manioc--1948

(Based upon un-corrected official data)

Source of data: Produção Agrícola: 1948.

MAP 130

244 São Filipe, 230 tons per square kilometer, with the 162 tons per square 433 127 kilometer of Conceição do Almeida, a more notable producer.

128 It was assumed that the unit value in São Filipe was the mean of the prices of Maragogipe and Conceição do Almeida--São Filipe is midway between these municípios in terms of location, transport, and external market relationship--and that:

$$\text{Production} = \frac{\text{Value}}{\text{Unit Value}} = \frac{4{,}290{,}000}{\frac{170 + 190}{2}} = 27{,}333 \text{ tons}$$

This figure is close to 28,000 tons, and it was inferred that the original figure had been transposed to 82,000 tons. Yield was then derived:

$$\frac{28{,}000 \text{ tons}}{2{,}100 \text{ hectares}} = 13.3 \text{ tons per hectare}$$

compared with 13.9 tons per hectare for Cruz das Almas and 11.1 tons per hectare for São Félix, nearby areas with similar conditions. Perhaps this yield is slightly high, but it is in the possible range of variation, and is an acceptable approximation.

[435] There was a second problem in Irará. The unit value of manioc here was Cr.$90 per ton, compared to Cr.$300 in nearby Coração de Maria, Cr.$240 in Feira de Santana, and Cr.$320 in Santo Amaro. Moreover, the density of production was very high, 26.45 tons per square kilometer total area, compared to 10.72 tons per square kilometer for Coração de Maria, especially since so much of northern Irará is not densely settled. When Cr.$200 per ton was postulated as the unit value of manioc, the production derived was 10,500 tons. Yield calculated by using this figure and the original area data would be 4.38 tons per hectare, which is unreasonably small. The yield calculated from the original data--14.6 tons per hectare--seemed approximately correct, and using these yield figures, with the derived production value of 10,500 tons, area was calculated as 719 hectares. The new area figure

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[435]

gave 0.54 tons per square kilometer total area, which corresponded to 0.59 tons per square kilometer for Coração de Maria.

In São Sebastião, the low unit value of manioc—Cr.$80 per ton—indicated possible error. The reasonable intensity of production suggested that the total value data were in error. The mean unit value of the four surrounding municípios—Cr.$240 per ton—was accepted for São Sebastião and was used to calculate a revised total value of Cr.$168,000.

Minor errors were apparent in the data for certain other municípios. For example, the yields of Maragogipe, Cachoeira, and Salvador were extremely low. Adjustments could have been made, but the relatively small manioc area and production in these municípios indicated that the resulting alterations would not markedly change the general area or production pattern. Maps 130, 131, 132, 133 and 134 show the patterns of manioc cultivation, production, and yield as taken from unmodified official data in Produção Agrícola: 1948. The corresponding maps based upon modified data (Maps 22, 23, 24, 25, and 27) are presented in Chapter V.

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Corn. Calculations from the original data gave Maragogipe a yield of .40 tons of corn per hectare, less than one-half the yield of neighboring municípios. This was excessively low, and it seemed preferable to use the figure of 1.24 tons per hectare, the mean of adjacent São Filipe and Cachoeira. These municípios, though not similar to the whole of Maragogipe, resemble very much the adjoining areas where cultivation is concentrated. The production figure for Maragogipe was accepted as reasonable, since when combined with value it produced a credible unit value. Thus the area was reduced from 15 hectares to 5 hectares, raising the yield to a more acceptable level. However, these changes do not modify the gross pattern extensively and therefore the maps in Chapter V were based upon the original data.

[TEXT CONTINUED ON PAGE 415]

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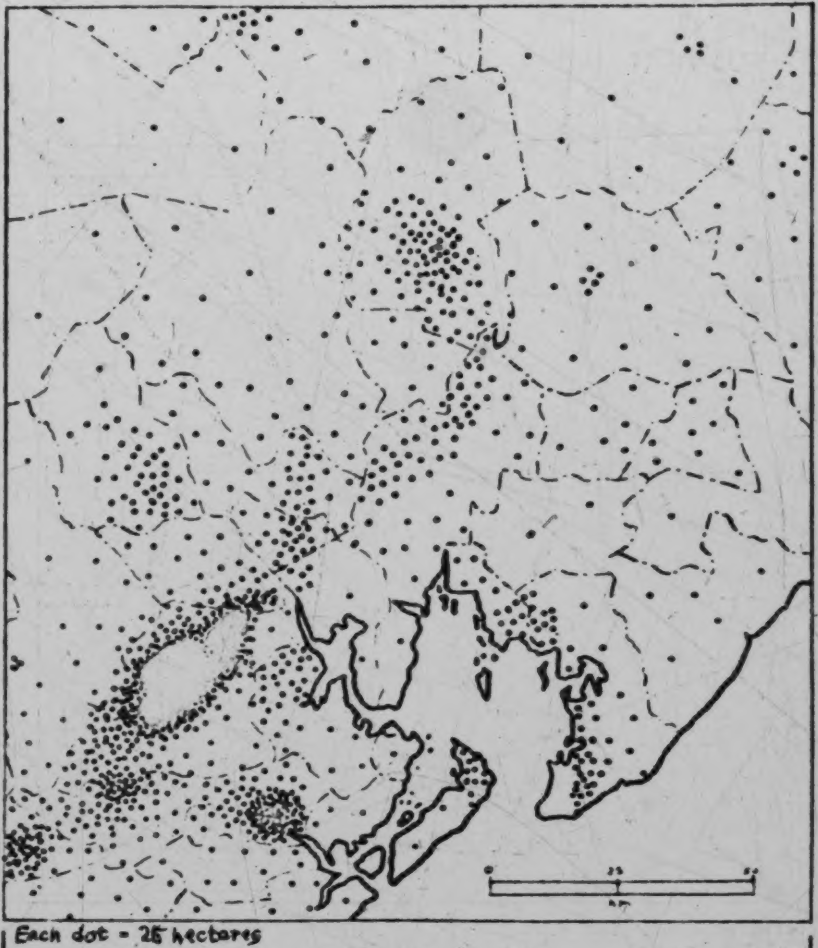

Each dot = 25 hectares

RECONCAVO OF BAHIA

Area in Manioc--1948

(Based upon un-corrected official data)

Source of data: Produção Agrícola: 1948.

MAP 131

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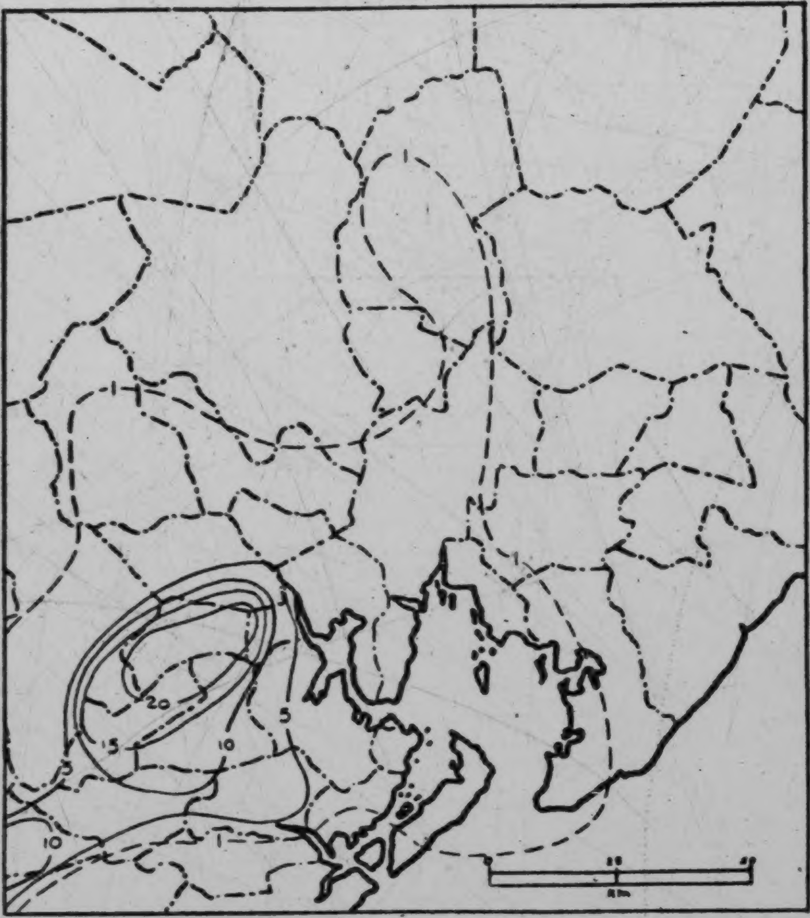

RECÔNCAVO OF BAHIA

Hectares of Manioc per Square Kilometer of Total Area—1948

(Based upon un-corrected official data)

Source of data: Produção Agrícola: 1948.

MAP 132

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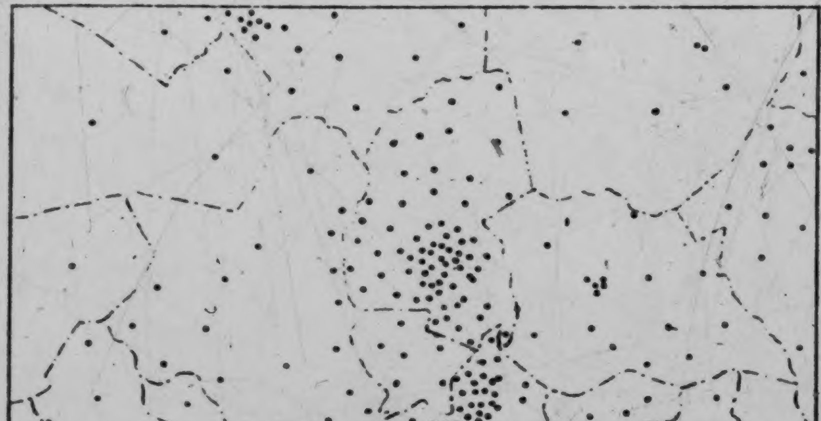

Each dot = 500 metric tons

RECONCAVO OF BAHIA

Production of Manioc--1948

(Based upon un-corrected official data)

Source of data: Produção Agrícola: 1948.

MAP 133

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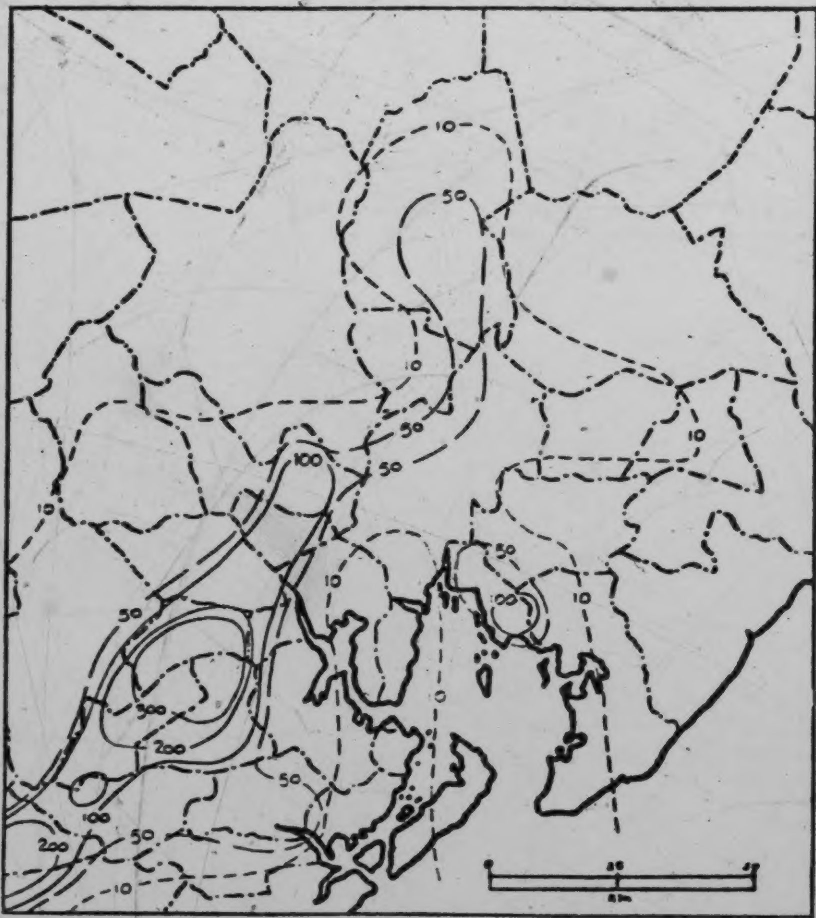
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RECÔNCAVO OF BAHIA

Tons of Manioc per Square Kilometer of Total Area—1948

(Based upon un-corrected official data)

Source of data: Produção Agrícola 1948.

MAP 134

243 127 Area data for corn should be used with reservation, especially
243 for the northern and western municípios. In the drier areas it is the
244 custom to plant corn and beans together in the same field, generally
127 in the same row, and the area could have been counted, in its entirety,
twice (once for each crop). Yield calculations for corn and beans
suggest that this has not been done; however, the vagaries of climate
and cultivation in these dry zones produce such variations in mean yield
from year to year and place to place that it was impossible to secure
a clearcut verification. Conversations with personnel of the compiling
agency failed to clarify the situation.

245 Bananas. The maps of banana area, based upon the official data,
433 127 reveal a definite gap in Cruz das Almas and northern São Filipe (Map 135).
However, this area lies in the middle of a belt of relatively dense
production. Field experience in this immediate area indicated that
bananas were at least as important in these two areas as in adjacent
Conceição do Almeida. The official data show only 7 hectares and 3,000
bunches of bananas in Santo Antônio, but the large numbers of banana
plants which were observed would tend to discredit these figures.
Since in the Recôncavo the area planted in bananas does not usually
have a consistent relationship to the number of plants and thus to
production, yields are not a trustworthy guide to the estimation of
245 production. On the map of banana production in the text (Map 52) the
433 official data have been modified to allow Cruz das Almas 190,000
127 128 bunches in place of the 29,000 in the official data; São Filipe,
70,000 in place of the official 20,000; and Santo Antônio, 86,000 in
place of the official 3,000. These changes re made by arbitrarily
increasing the production data to give these areas the same density
of production as similar areas in adjacent municípios. Since, as has

[TEXT CONTINUED ON PAGE 417]

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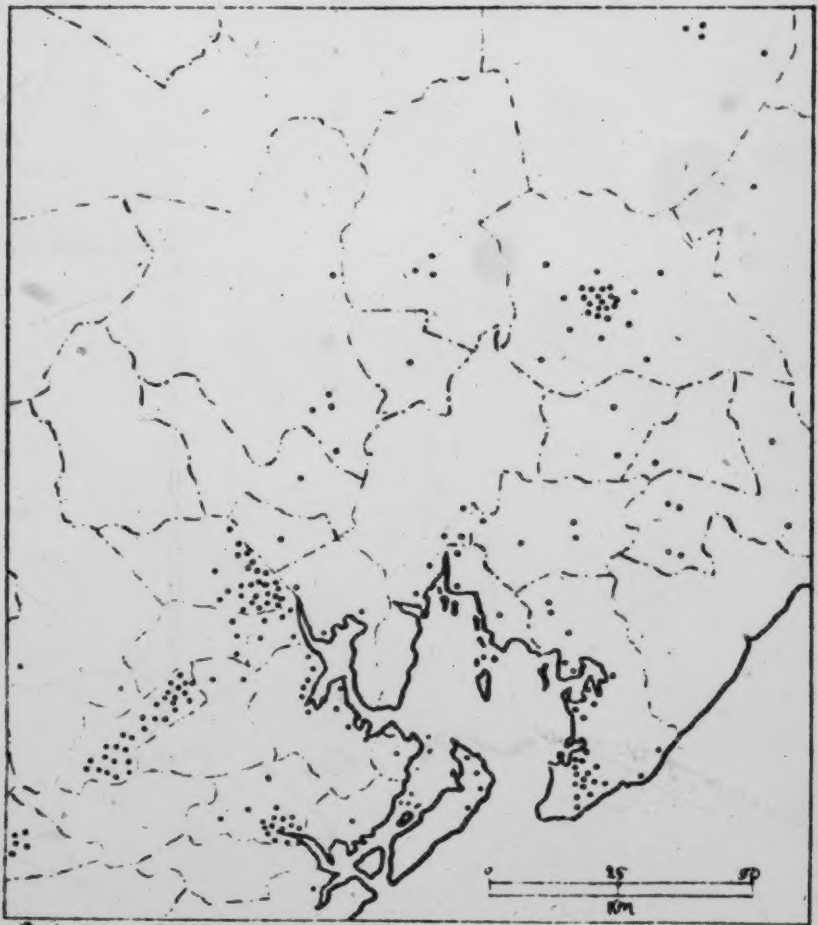
433



Each dot = 10,000 bunches

RECONCAVO OF BAHIA

Production of Bananas--1948

(Based upon un-corrected official data)

Source of data: Produção Agrícola: 1948.

MAP 135

245 been indicated, banana area and production do not have a consistent re-
433 lationship, no attempt has been made to alter the map of cultivated
127
128 area for bananas.

249 *Tobacco*. Although there is a large range in tobacco yields
433 within the Recôncavo as calculated from the official data, only those
127 for São Filipe seem completely unacceptable. If the area of this
município were at the high level—3,600 hectares--indicated and the
given production data are correct, then its yield was an infinitesimal
190 kilograms per hectare. The official production data are, in
approximate terms, confirmed by other sources.[1] However, the area
indicated by the official data is much higher than either the data
249 of Marques or field experience would indicate. Estimates from the
433 mean of surrounding *municípios*, from the mean yield calculated from
127 Marques, and from the area given by Marques adjusted to the 1948 level of
128 production, give the following figures, respectively: 675 hectares,
692 hectares, and 700 hectares. The median of these figures—692 hectares--was selected and used in preparing Maps 28, 29, and 33 in
Chapter V.

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113 [1] Antonio Monanto Marques, *op. cit.*, pp. 1-85; and Instituto Bahiano do Fumo, *Contribuição do Instituto Bahiano do Fumo*, pp. 1-16.

APPENDIX E

Tobacco Zones of Bahia

249 659 311 The tobacco industry, the exporting houses, and the official tobacco organizations of the government have divided the entire leaf tobacco producing area of Bahia into four zones on the basis of the kind of tobacco produced. None of these zones even approximately coincides with the Recôncavo, but three of the four include Recôncavo municípios, while the edge of the fourth touches upon the region. These four zones, in order of approximate relative value of their leaf, are "Mata," "Feira," "Caatinga," and "Sertão." Many different types and grades are included in "Sertão." The accompanying map (Map 136) shows the relationship of these zones to the Recôncavo.

249 311 "Mata," the most valuable, is a good burning, light to medium tobacco which can be used after twelve months of curing. Very often it is worth twice as much as the next grade. The "Mata" zone stretches from northern Santo Amaro to the southwestern extreme of the coffee zone. It is divided into three parts—norte, which includes northeast Santo Amaro, southeast Feira de Santana, and Cachoeira; sul, which includes southern Castro Alves, southern Santo Antônio, São Miguel, and the municípios to the southwest; and fina, which includes São Gonçalo, Conceição da Feira, Muritiba, Conceição do Almeida, Cruz das Almas, São Filipe, São Félix, Maragogipe, and northern Santo Antônio. The greatest premium within the Mata Fina grade is given for Cruz das Almas leaf, although São Gonçalo leaf also is highly valued. In addition to the intrinsic value of the leaf, "Mata" tobacco is valuable because of its uniformity, both from area to area and from year to year. In part this uniformity results from the fact that it is grown upon similar

[TEXT CONTINUED ON PAGE 420]

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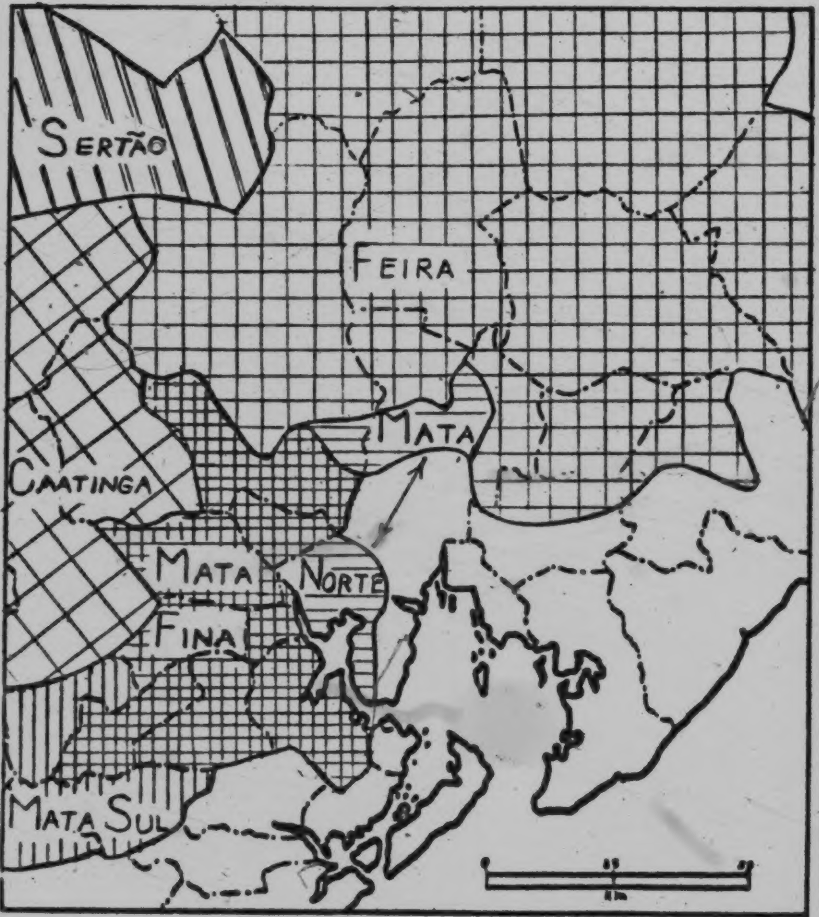
SERTÃO
FEIRA
MATA
CAATINGA
MATA NORTE
MATA FINA
MATA SUL

RECONCAVO OF BAHIA

Official Zones of Tobacco Production

Grades of Bahia-Brasil Leaf

MAP 136

249 311 soils under more dependable rainfall conditions than are characteristic of the other zones.

The "Caatinga" zone includes Santo Estêvão, Castro Alves, Ipirá, and Santa Teresinha--the município west of Castro Alves. When the rains [132] [134] of the growing season--June, July, and August--are plentiful, these tobaccos are much like those of the "Mata" zone, though somewhat harsher--probably because of the more saline soils. If precipitation is scarce, the tobacco is gummy and requires long curing--two years or so--before use. If the rains fail entirely, a second attempt may be made to plant during the summer rains of November, December, and January.

The "Feira" zone includes Feira de Santana, Coração de Maria, Irará, Alagoinhas, Catu, Pojuca, northeastern Santo Amaro, and northern São Sebastião, as well as Inhambupe, Entre Rios, and Serrinha. "Feira" leaf is often large, rather dark, and moderately strong, and requires [132] at least two years for curing. Like the "Caatinga," its quality varies in response to changes in precipitation, but in general it is more uniform.

"Sertão" tobacco is highly diverse in type and quality. Its zone of production is large in size, extending west to the Chapada Diamantina and southward beyond the Rio de Contas. Generally this leaf is large and coarse, but as a result of the diverse physical conditions in the scattered areas in which the crop is produced, the quality of the leaf is variable over a wide range.

APPENDIX F

Comparison of 1940 and 1948 Data for Cultivated Areas

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The figure for cropland in 1948, derived from the total area in principal crops, is less than half the total cultivated area which is given in the 1940 Censos Econômicos, as shown on the table which follows (Table XII). The development of the individual crops, indicated by the statistical material available and by the situation which is to be observed in the area, indicates quite clearly that the catastrophic decline which these figures would seem to indicate has not in fact taken place. The growth of the population of the Recôncavo, without concurrent industrialization or radical reorganization of the agricultural system, has required the expansion, not the contraction, of the cultivated area. It is clear that the 1940 census data must have included much land that was not in crops--probably it included those areas which customarily were cultivated under the land rotation system but which were not, in 1940, in crops. Since the census was based upon the opinion of the agriculturalist as to the cultivated area and since it is the custom to regard fields recently abandoned as cultivated land, it is easy to see how the 1940 figure was so large. It is assumed, therefore, that the 165,235 hectares which the census called cultivated area in 1940 corresponds to the general area in which cultivation was customary and not to actual cropland.

TABLE XIX

COMPARISON OF LAND CULTIVATED AS GIVEN IN THE 1940 CENSUS AND AS CALCULATED FROM 1948 CROPLAND DATA

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	Land Cultivated 1940	Land Cultivated 1948	Change
Central Recôncavo:			
Santo Amaro	19,252	8,417	-10,835
São Francisco	3,227	1,063	- 2,164
São Sebastião	4,798	2,516	- 2,282
Cachoeira	4,326	1,154	- 3,172
Northern Recôncavo:			
Coração de Maria	4,653	1,092	- 3,561
Irará	27,630	9,115	-18,515
Alagoinhas	3,868	2,464	- 1,404
Northwestern Recôncavo:			
Feira de Santana	20,457	3,994	-16,463
São Gonçalo	4,270	3,614	- 656
Conceição da Feira	2,363	1,343	- 1,020
Santo Estêvão	10,145	8,500	- 1,645
Southwestern Recôncavo:			
Muritiba	7,654	3,333	- 4,321
Crus das Almas	8,585	12,796	+ 4,211
Conceição do Almeida	11,419	7,506	- 3,913
São Filipe	5,942	6,430	+ 488
São Félix	3,482	1,512	- 1,970
Eastern Recôncavo:			
Catu	5,484	741	- 4,743
Pojuca	1,037	259	- 778
Southern Recôncavo:			
Maragogipe	7,221	1,342	- 5,879
Itaparica	4,492	891	- 3,601
Salvador	4,930	1,921	- 3,009
Recôncavo Total	165,235	80,003	-85,232

Source: Recenseamento Geral do Brasil: 1940. Censos Econômicos, Bahia, Vol. II, and Produção Agrícola: 1948.

APPENDIX O

Procedure Used in Estimating Value of Animals Produced in the Recôncavo in 1948

231 The 1948 data on livestock[1] gave the total number of animals
233
433 for each *município* but did not show the number slaughtered nor the value
127 of animal production. An estimate of the latter figure was made for
128 1948 in order to compare the value of crop and livestock production for
that year. The method of estimation was as follows.

It was assumed that the change in the cattle population between these years was the best available index of the change in the value of animal production, since cattle are the most common and most valuable major animal. The index of change thus derived was used to raise or lower the 1940 value of animal production of each *município*, as given in the *Censos Econômicos*, *Bahia*, *Vol. II*, to a 1948 level, but still in terms of 1940 currency. This latter figure was increased by 350 per cent to conform to the declining value of the *cruzeiro*. For example:

$$\text{Alagoinhas: } \frac{\text{1948 cattle}}{\text{1940 cattle}} = \frac{26{,}060}{13{,}090} = 2 \text{ (approx.)}$$

1940 value of production = Cr.$825,000

Cr.$ 825,000 x 2 = Cr.$1,650,000

Cr.$1,650,000 x 3.5 = Cr.$5,775.000.

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[1] Ministério da Agricultura, Serviço de Estatística da Produção, "População Pecuária, Em 31/12/1948."

[P.424]

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BIBLIOGRAPHY

BIBLIOGRAPHY

113 Amaral, Luis. *Historia Geral da Agricultura Brasileira.* 3 vols. São Paulo: Companhia Editora Nacional, 1939-40.

Bondar, Gregório. "Solos da Bahia, Sua Conservação e Aproveitamento," *Boletim Geográfico*, Vol. IX, No. 99 (June, 1951), 243-281.

Brazil, Instituto Brasileiro de Geografia e Estatística. *Características Demográficas do Estado da Bahia.* No. 8. Rio de Janeiro: Serviço Gráfico do Instituto Brasileiro de Geografia e Estatística, 1949.

Brazil, Instituto Brasileiro de Geografia e Estatística. *Recenseamento Geral do Brasil: 1940. Censo Demográfico*, Regional Series, Part XII--Bahia, Vol. I. Rio de Janeiro: Serviço Gráfico do Instituto Brasileiro de Geografia e Estatística, 1950.

Brazil, Instituto Brasileiro de Geografia e Estatística. *Recenseamento Geral do Brasil: 1940. Censos Econômicos*, Regional Series, Part XII--Bahia, Vol. II. Rio de Janeiro: Serviço Gráfico do Instituto Brasileiro de Geografia e Estatística, 1950.

Brazil, Conselho Nacional de Estatística. *Anuário Estatístico do Brasil--1949, Ano X.* Rio de Janeiro: Serviço Gráfico do Instituto Brasileiro de Geografia e Estatística, 1950.

Brazil, Conselho Nacional de Estatística. *Anuário Estatístico do Brasil--1953, Ano XIV.* Rio de Janeiro: Serviço Gráfico do Instituto Brasileiro de Geografia e Estatística, 1953.

Brazil, Conselho Nacional de Geografia and Departamento de Geografia, Engenharia Rural e Açudagem do Estado da Bahia. "Mapa Geral do Estado da Bahia." Rio de Janeiro: Serviço Gráfico do Instituto Brasileiro de Geografia e Estatística, 1953. (Map at scale of 1:1,000,000).

Brazil, Conselho Nacional de Geografia. "Cartograma da Divisão Administrativa do Estado da Bahia." Rio de Janeiro: Serviço Gráfico do Instituto Brasileiro de Geografia e Estatística, 1945. (Map as scale of 1:1,000,000).

Brazil, Ministério da Agricultura, Departamento Nacional da Produção Mineral, Divisão de Águas Secção de Hidrologia. *Atlas Pluviométrico do Brasil 1914-1938.* Boletim No. 5. Rio de Janeiro: Departamento Nacional da Produção Mineral, Divisão de Águas Secção de Hidrologia, 1948.

Brazil, Ministério da Agricultura, Serviço de Estatística da Produção. "População Pecuária, Em 31/12/1948." (Section of unpublished mimeographed manuscript).

113

Brazil, Ministério da Agricultura, Serviço de Estatística da Produção. *Produção Agrícola: 1948*. Rio de Janeiro: Serviço Gráfico do Instituto Brasileiro de Geografia e Estatística, 1950.

Brazil, Ministério da Agricultura, Serviço de Meteorologia. *Normais Climatológicas*. Rio de Janeiro: Serviço de Meteorologia, 1941.

Calogeras, João Pandiá. *A History of Brazil*. Trans. and ed. Percy Alvin Martin. Chapel Hill: The University of North Carolina Press, 1939.

Companhia Energia Electrica da Bahia. *Curious and Interesting Facts Concerning the First European Settlement Made in the New World*. Information Sheet No. 1. Bahia: Companhia Energia Electrica da Bahia, [1931].

Companhia Energia Electrica da Bahia. *Geology and Climate*. Information Sheet No. 2, with geological information maps and sections furnished by Horace E. Williams. Bahia: Companhia Energia Electrica da Bahia, [1931].

Companhia Energia Electrica da Bahia. *Rural Aspects of Bahia*. Information Sheet No. 4. Bahia: Companhia Energia Electrica da Bahia, [1931].

Egler, Walter Alberto. "Aspectos Gerais da Cultura do Fumo na Região do Recôncavo na Bahia," *Boletim Geográfico*, Vol. X, No. 111 (November-December, 1952), pp. 679-688.

Food and Agriculture Organization of the United Nations. *Yearbook of Food and Agricultural Statistics 1953*. Vol. VII, 2 Parts. Rome, Italy: Food and Agriculture Organization of the United Nations, 1954.

Freyre, Gilberto. *Nordeste*. Rio de Janeiro: José Olympio Livraria Editora, 1937.

Froes Abreu, Sylvio. "O Recôncavo da Bahia e o Petróleo de Lobato," *Revista Brasileira de Geografia*, Vol. I, No. 2 (July-September, 1939), pp. 57-83.

Guerra, Ignez Amelia Leal Teixeira. "Comentario do Mapa de Produção do Cacau no Estado da Bahia," *Boletim Geográfico*, Vol. X, No. 111 (November-December, 1952), pp. 739-741.

Immigration and Colonization Council. *Modern Brazil*. Rio de Janeiro: Immigration and Colonization Council, 1949.

Instituto Bahiano do Fumo. *Contribuição do Instituto Bahiano do Fumo*. A Report Prepared for the First National Tobacco Congress. Salvador, Bahia: Instituto Bahiano do Fumo, 1952.

James, Preston E. *Latin America*. New York: The Odyssey Press, 1942.

113 Joint Brazil-United States Economic Development Commission. The Development of Brazil. Institute of Inter-American Affairs, Foreign Operations Division. Washington, D. C.: U. S. Government Printing Office, 1953.

Kuznets, Simon, Wilbert E. Moore, and Joseph J. Spengler (eds.). Economic Growth: Brazil, India, Japan. Durham, N. C.: Duke University Press, 1955.

Linton, Ralph (ed.). Most of The World. New York: Columbia University Press, 1949.

Lopes da Cruz, Ruth Magnanini. "Comentário do Mapa de Densidade de População da Bahia em 1940," Boletim Geográfico, Vol. X, No. 111 (November-December, 1952), pp. 735-738.

Mayor, Ariadne Soares Souto. "Comentário do Mapa da Produção de Fumo na Bahia," Boletim Geográfico, Vol. XI, No. 112 (January-February, 1953), pp. 87-90.

Nonato Marques, Antonio. Geografia do Fumo na Bahia. Salvador, Bahia: Centro de Estudos Ruralistas Nonato Marques, [1952].

Normano, J. F. Brazil. A Study of Economic Types. Chapel Hill: The University of North Carolina Press, 1935.

Office of Foreign Agricultural Relations. Map of "Manioc Estimated Production in Latin America," Agriculture in the Americas, Vol. III, Nos. 8-9 (August-September, 1942), p. 120.

Oliveira, Mario Martins de. "Recôncavo." Bahia: Organização Brasileira de Edições Culturais, n.d. (Map at scale of approximately 1:500,000).

Prado, Caio, Jr. História Econômica do Brasil. Second edition. São Paulo: Editôra Brasiliense Limitada, 1949.

Simões, Ruth Matos Almeida. "Comentário do Mapa da Produção de Cana de Açúcar no Estado da Bahia," Boletim Geográfico, Vol. XI, No. 113 (March-April, 1953), pp. 171-173.

Simões, Ruth Matos Almeida. "Comentário do Mapa da Produção de Mandioca no Estado da Bahia," Boletim Geográfico, Vol. XI, No. 112 (January-February, 1953), pp. 84-86.

Smith, T. Lynn. Brazil: People and Institutions. Baton Rouge: Louisiana State University, 1946.

Spiegel, Henry William. The Brazilian Economy. Philadelphia: The Blakiston Company, 1949.

Teixeira, Orlando G. "Solos do Recôncavo da Bahia," Boletim da Secretaria da Agricultura, Industria, e Comercio do Estado da Bahia, Vol. XLIX, No. 11 (April-June, 1952), pp. 31-39.

113

Trewartha, Glenn T. An Introduction to Climate. Third edition. New York: McGraw Hill Book Co., 1954.

Wagley, Charles (ed.). Race and Class in Rural Brazil. Paris: United Nations Educational, Scientific and Cultural Organization, 1952.

102

[For maps relating to production statistics and other agricultural matters in the Reconcavo of Bahia, see category 116 passim.]